TRENDS IN EDUCATION

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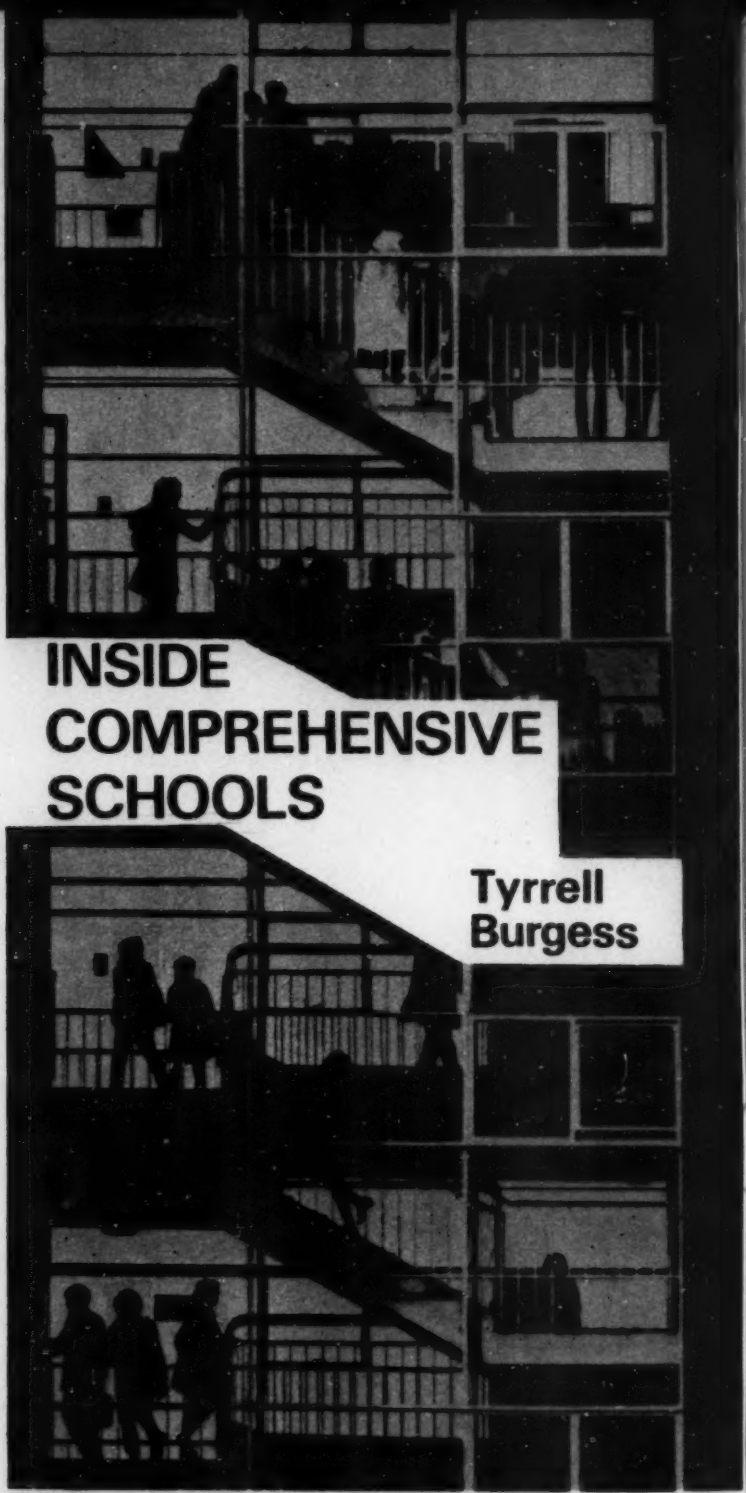

INSIDE COMPREHENSIVE SCHOOLS

Tyrrell Burgess

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The rapid spread of French in primary schools outside the pilot project has inevitably resulted in uneven performance and some serious weaknesses. This article draws on the experience of HM Inspectors in many differing areas.

French Without Pilot

R. C. WILLIAMS

In the last five years one of the principal innovations in the curriculum of a large number of primary schools in this country has been the introduction of French lessons. Numbers of schools had earlier done some work in French, particularly with older children, but since 1944 or thereabouts French has been introduced on an organised basis in areas administered by well over half the local education authorities. This has been done in a number of ways. On March 13, 1963 the (then) Ministry of Education and the Nuffield Foundation announced that an experimental project for the teaching of French in the age range 8–13 was to be instituted, sponsored by the Schools Council and the Nuffield Foundation. This was initially to involve 124 primary schools in thirteen areas of England and Wales, often known as the pilot areas. It was not long before many areas which had originally applied for full membership of the pilot project were granted associate membership and were expected to make certain provision in a number of schools for the teaching of French. Yet other local education authorities made independent plans for French teaching without association with the pilot project and there remain the large number of primary schools where French is taught on a 'freelance' basis without reference to what may be going on in neighbouring primary or secondary schools.

The main issues concerning the introduction of French on a substantial scale were listed in *French in the Primary School*, Schools Council Working Paper, No. 8.

1. Is any substantial gain in mastery of a foreign language achieved by beginning to teach it at 8 instead of 11?
2. Do other aspects of educational and general intellectual development gain or suffer from the introduction of a foreign language in the primary school?
3. What are the organisational, teaching and other problems posed by such an experiment?
4. Are there levels of ability below which the teaching of a foreign language is of dubious value?
5. What methods, incentives and motivations are most effective in fostering learning of a foreign language?

One of the most important considerations in the minds of those planning the pilot scheme was the provision of a sufficient number of primary school teachers able to teach French by an oral method.

Local in-service training courses were set up in the pilot areas and subsequently large numbers of teachers have attended intensive courses in Paris, Besançon or London.

The children who formed the first 'cohort' of the pilot scheme schools in September 1964 are now in their third year of secondary education. They are followed by second and third cohorts and the progress of all of them, not only in French, is being observed and assessed by the National Foundation for Educational Research (NFER) and by HMIs. Progress in the pilot areas is described in the interim report *French from Eight* by Mrs. Clare Burstall published by NFER. HM Inspectors carried out surveys during 1967 and 1968 in thirteen areas comprising the pilot scheme.

The National Foundation's Report

It is stressed that this is an interim account of a pilot scheme, but it does include some tentative conclusions which may remain valid. For example, it is clear from the data already processed that two of the factors affecting the level of achievement in French of the less able child are the attitude of his teacher and the ability range of the class in which he is taught. The report stresses, also, that observations refer to oral work and that 'the introduction of reading and writing in French might present serious difficulties to an initially successful child who had previously learned to associate failure with the written word.'

The results of the tests administered by NFER are presented in the form of statistical tables and graphs which analyse the sample of children, their social background, their general attainment at the beginning of the French course (the figures for their general attainment at the end of their primary school course were not available at the time of publication of the report) and their performance in the various tests administered to them during the course. The results will not surprise anyone with reasonable knowledge of the attainments of primary school children. When children from the 35 small rural schools in the pilot scheme and those from the control schools not doing French were re-tested in May 1966 the children from the control schools tended to do better although differences between mean scores only reached statistical significance within single sub-groups. Significant differences in favour of control groups occurred only in the "unskilled" parental occupation group. Attainment in French in the pilot scheme schools was measured by means of tests in listening, comprehension, oral production (repetition), and reading comprehension, based on the courses in use in the schools. The tests were administered in June 1966 and June 1967. The results of the 1967 test in reading comprehension were not available at the time of the publication of the report. In the listening comprehension tests children whose parents were in professional amd clerical occupations were more successful on average than those whose parents were in skilled, semi-skilled or unskilled occupations. It is interesting to note that children from the 35 small rural schools did significantly better than children in the other groups. 'The high standard of attainment in French in Group 3 (small rural) schools could be attributed in part to class size, to the stability of the school population, or to particular teacher characteristics—to name only a few of the possible variables.'

The report devotes a section to low ability children, 1,711 out of 11,510 in the sample. Three hundred and eight of these children scored above the mean calculated for their school group and 'cohort' in listening comprehension. Relevant quotations from the report are 'Teachers actively engaged in teaching French to one or more classes tend to view the capabilities of the less able child in a more encouraging light', and 'Teachers not involved in the teaching of French tend to display a markedly negative attitude towards the less able child's potential level of achievement in French.' There are also some interesting observations on the influence of the attidues of headmasters and, at this stage of the analysis, the experimental evidence suggests that low ability children reach the highest level of achievement in French when they are taught in heterogeneous groups in schools where the head has a favourable attitude towards the teaching of French to the whole ability range.

Teaching Strengths

In the NFER report there are also a number of tables referring to the teachers responsible for French in the pilot scheme schools and it is interesting to note that 'the most common preparation for teaching French in a pilot scheme primary school is the possession of an O-level pass in French usually supported by a period of residence in France and often supplemented by attendance at further education courses in French'. This statement has important implications with regard to the provision of a sufficient number of teachers if French is to be even more widely taught in primary (and, possibly, secondary) schools.

Section six of the report, discusses the supply and training of teachers at greater length and the results of the tests applied to the ratings of classes described as 'very fluent' or 'fluent', compared with classes described as 'hesitant' or 'very hesitant', suggest that 'the rated fluency of the French class is related to certain aspects of the teacher's training for the pilot scheme, his fluency in French, the extent to which English is used in the French lessons, and the type of room in which the French lessons are held. Neither the teacher's original training and qualifications nor the length and type of his previous teaching experience appear to be associated with the rated fluency in French of his class. This latter finding would appear to strengthen the view that an extension of French teaching to primary schools throughout the country could be put into practice, without making unrealistic demands on potential teachers of French.' The report goes on to suggest that it should be possible to provide class teachers with *no qualifications in French* with an in-service training programme which would enable them to teach French effectively to their own classes. This statement would need a good deal of elaboration before it could be accepted uncritically but there is no doubt that the NFER report and the HMI surveys outside the pilot scheme agree on the importance and frequent effectiveness of in-service training. At the same time a number of the HMI surveys comment on the valuable contribution being made by graduates in French and it is important to stress the fact that sufficient fluency to teach French satisfactorily at any level is not swiftly acquired and that fluency on its own is not enough.

At a time when audio-visual courses, teaching machines, programmed learning and other 'aids' are appearing in our schools it is important for teachers to remain aware that their personal skill and knowledge are vitally important in the classroom. This is nowhere more true than in the teaching of French in the primary school. A suitable course, properly used, may achieve a great deal but the teacher's own fluency (including good intonation and accent) and method are the essential elements of success. The lack of these two elements is almost certainly the weakest point of French in the schools included in the HMI surveys which all refer to the slight achievement in French of a substantial percentage of the teachers. It must be said at once that many are fully aware of their limitations. Many are making an effort to improve the quality of, particularly, their spoken French, but only a minority were sufficiently fluent at the time of the surveys to be regarded as really competent to teach French.

Qualifications varied from honours degrees to school certificate taken many years ago. Most areas had provided courses of in-service training of varying duration and intensity. Some had made arrangements for teachers to attend the intensive courses held under the auspices of the Department of Education and Science in London, Paris and Besançon. The response to these courses had not always been good but the need for them at local and national levels remains urgent if reasonable results are to be achieved. There are other obvious difficulties, notably perhaps the size of teaching groups and the movement of teachers. It will never be an easy matter to teach French to classes of forty children as frequently occurs at present, particularly when emphasis is rightly laid on speaking the language. Where teachers are concerned, a school may be adequately staffed at one moment but may swiftly find itself without teachers who are competent in French. Use of teachers varied greatly in the areas surveyed. Some employed peripatetic specialists, with a degree of success. In others, schools so arranged their work that teachers became almost 'semi-specialists'; elsewhere the subject might be taught by the class teacher whose own French might be far from adequate. It is worth noting that an increasing number of young teachers who have studied French as a 'main' subject at a college of education are now entering the schools and it is clearly in the interests of French teaching in primary schools that these teachers should be given the opportunity of using their knowledge of language and contemporary method in their careers. Employing authorities and heads of schools in areas where French is taught have some responsibility for ensuring that teaching skills are deployed as efficiently as possible. The HMI surveys and the NFER report stress the importance of the teacher's fluency and the detailed findings set out in the report leave the reader in no doubt on this score.

Patterns of Organisation

The schools in the pilot scheme are expected to conform as much as possible to a certain pattern in the organisation of the teaching of French and it is probable that there is a greater similarity in this respect between schools in the scheme than there is between schools in associate or other areas. It is immediately apparent from reading the HMI surveys that there are great variations in the organisation of

the subject in schools of any one area and between areas. In one of the areas surveyed French is introduced to children of the age of seven in five schools, of eight in five schools and of nine in four schools. Similarly the number of lessons per week in the schools of an area ranges from five to one. In many schools an effort is made to teach French throughout the ability range; in others the least able are excluded or, alternatively, only the 'top' stream receives French lessons.

Very few of the surveys gave the impression that the teaching of French had been thoroughly organised throughout the area under review and it is significant that one of these areas had enjoyed the services of two able and energetic organisers in succession. The lead or support given by head teachers is as much a factor in the surveyed areas as in the pilot scheme areas and HM Inspectors give due weight to it. It is evident, however, that the organisation of the subject in many of the areas under review verges on the haphazard and inside the schools the picture is no clearer. One school was teaching French to girls in the first year whilst boys had to wait until the second year. This is an extreme case but in many areas few schools appear to offer a course comparable to that of their neighbours with the inevitable result that there is little similarity of achievement at the end of the time spent by the children in their primary schools. The problem which this state of affairs presents to the secondary schools is obvious. In the pilot areas the first 'cohort' of children entered secondary education in September, 1967 and the NFER report deals only with their first two years of French in primary schools. However, a conference attended by teachers from primary and secondary schools in the pilot scheme gave the impression that there were good relationships between the schools and that liaison was satisfactory.

It is clear, however, from the HMI surveys that liaison in other areas leaves a great deal to be desired and in many is virtually non-existent. Little or no separate provision was made for children who had completed a primary school course in French and thus a secondary school first form might contain children with no French or with such varying achievements behind them that a teacher could assume nothing and would start once again from the beginning. There is a dual responsibility here. The secondary schools should take note of what is done in the primary schools and it is important that contributory primary schools should correlate their own courses in French, and keep the secondary schools informed about their achievements. The NFER report regarded it as 'fundamental that all the pupils taking part (in French lessons) at least in a given area should commence French at the same age'. It is equally desirable that they should devote similar amounts of time to French, preferably in daily lessons and there is much to be said for the schools of one area using the same course.

Equipment and Courses

The provision of equipment and courses in the primary schools of the areas surveyed suggested a generally satisfactory situation. Most schools had tape recorders and film-strip projectors (where these were needed) of acceptable quality and nearly all the schools use one (occasionally two) of three popular courses—'*En Avant*', '*Bonjour Line*' or '*Bon Voyage*'. ('*French in the Primary School*', Schools Council Working Paper No. 8,) states 'Overall 80 per cent of the schools in

the pilot areas are using the Nuffield materials (i.e. '*En Avant*'), the next most commonly used materials being the French produced audio-visual course '*Bonjour Line*', and the US produced teaching film series ('*Parlons Français*'). A few schools used the ITV primary school French programme though it is designed to supplement rather than to replace other courses. Schools in one area might be using any of the courses mentioned and except where the subject had been organised from outside there appeared to be little liaison or co-operation between them. Within the schools there is great variety of provision. Some have a French room decorated to create a French atmosphere; others have at least a French corner in the classroom where the language is taught; yet others, the majority, make little effort to link the subject with any other aspect of school work. Referring to the pilot areas the NFER report comments in this context, 'the practice of holding French classes in boiler rooms, corridors or other unsuitable accommodation has a detrimental effect on the level of achievement in French. It is not only the unpleasant atmosphere of a spare room or a boiler room which might account for low fluency in French, but also the fact that such rooms usually have poor acoustic qualities—a critical factor when French is taught audio-visually'.

As in the pilot areas all the schools visited in the surveys attempted an oral approach though in at least one some work was done in the context of translation. The most successful schools practised a controlled vocabulary and range of structures and provided a resourceful exploitation of the audio-visual lesson in which a great deal depended upon the fluency of the teacher and the flexibility of approach to the subject. There are frequent comments in the surveys, however, on the absence of progression in many schools in the pupils' use of the language leading, where desirable, to reading and perhaps writing. In some schools it is difficult to detect whether children are in their third or their first year of French and in many there appeared to be little or no progress in the knowledge of structures. This may largely be due to inability on the part of the children to retain the content of a lesson in their memories, possibly due to the unsuitability of a course which may demand more than the children are able to give and, at times, to inadequate exploitation of the material presented in the earlier stages of a lesson. The exploitation of rehearsed material is the crucial part of a lesson and this was frequently the least satisfactory stage. It was evident on many occasions during the surveys that teachers had not been trained to use an audio-visual course. Some courses give more support to the teacher than others and it is clear that to persuade children to make meaningful use in a variety of contents of words and structures learnt in a particular context is a highly skilled business. The most successful teachers are able to persuade their pupils to activate the French they have learnt by listening and repeating and, not surprisingly where there is fluency allied with good method, there is rewarding progress. In many schools pronunciation was acceptable but good intonation was rarely heard. Only in a minority of schools was the study of French integrated with other elements of the curriculum and, even more regrettable perhaps, liaison with secondary schools in most areas was practically nil. The need for closer links between primary and secondary schools is stressed in all the surveys. At present the lack of contact is disturbing and leads to a substantial amount of wasted effort at both levels.

Attitudes and Achievements

A most important but possibly underconsidered element in the teaching of French in the primary school is the attitude of the children towards the subject. It is clear from the surveys that though in many schools the children enjoyed their French lessons, there was also a good deal of boredom and incomprehension, which may also, of course, be true of other subjects. It would be naïve to assume that all children are anxious to learn French or to believe that many who are enthusiastic at first retain their enthusiasm when the going gets a little harder. In the very recent past the great majority of children who learnt any French began to study the language on entering secondary education. They included the most intelligent children of their age group and were those most likely to succeed. An effort is now being made in this country to teach French much further down the ability range, often at an earlier age, by methods which have yet to be fully developed or even understood. It will not be surprising if substantial numbers of children, who until recently would not even have had the opportunity of learning French, find in fact that they are unable to make visible progress and become disheartened.

The surveys were unanimous in their concluding observations which provide possible guide lines to areas and authorities which are already offering a course in French in their primary schools or are contemplating doing so.

Suggestions

As well as the recruitment of teachers, extensive in-service training in language and method for primary and secondary school teachers is essential if this experiment is to flourish. A given area should have a policy which is generally known to the schools and which they should be given the resources to implement. There needs to be close liaison between primary and secondary schools based possibly on teachers' centres or on reciprocal visiting to ensure more effective continuity than is often the case at present.

In the classroom pace and progression in French as in other lessons is essential. Some degree of central direction in an area seems inevitable and the services of an organiser can be invaluable. Heads and teachers need guidance and even in areas associated with the pilot scheme there is a lack of knowledge of the obligations which association implies.

There is much goodwill on the part of authorities, heads, teachers and pupils. Much money has been spent, usually wisely, on good materials and equipment. At the same time it has to be said that the overall picture presented by the surveys is not a happy one. There are schools providing worth-while courses in French but in many others, for reasons frequently outside their control, progress is slow and not commensurate with the efforts and hopes of many people. Though it would not be claimed that the surveys are conclusive, they sound notes of warning as well as of guidance and encouragement and it seems very probable that authorities and schools in many areas would do well to reconsider their approach to French in primary education in the light of experience which has been gained in recent years.

Research into methods of teaching reading has been varied and extensive. Here is a summary for the non-expert.

The First R

MARTYN CLÉMANS

The really effective teacher of reading is one who sets reading in the total context of learning, and makes children want to read not simply because their teacher, their parents and society want it, but because it provides a way to knowledge that the child himself wants. Unless there is motive for reading, standards are likely to fall once he or she leaves school.

The process of learning to read is a complicated one. Our eyes examine groups of small, complex, two-dimensional shapes. The brain interprets the stimulus that these give to the retina and associates it with a sound from a memory store derived from past experience. Thus intelligence and experience are drawn into reading. The eye, as it travels along the line of print or script, stops at intervals which have been called 'fixations'. At these points several words will be seen at once, some—those central to the vision—clearly, some blurred. It is only at these stopping points that the eye can pick up the stimuli from words and phrases. The number of fixations the eye makes will depend on the difficulty of the material; difficulty depending on the reader's previous knowledge of the subject, motivation at the time, and general intelligence.

It is very much easier and also less tiring to read short lines than long ones; in some cases fixation can be reduced to the absolute minimum of one per line—for example in reading newspapers. Many adults in Britain never read anything beyond newspapers—some lack even the ability to do this. Few children leave school totally illiterate but many have so little interest in reading that they soon lose what little facility they once had.*

It has been said (Rosewell and Natchez) that there is never one single cause of reading failure, but that it always stems from a number of factors in combination. Reading ability and intelligence are known to be positively correlated, particularly in the early school years. However Malmquist among others has shown that social and environmental factors are more important than intelligence alone.

Some children are known to have difficulty in perceiving the printed

* Words like illiterate and semi-literate have different meanings for the educational psychologist and the layman. The Ministry of Education pamphlet *Reading Ability* (1950) gave some useful definitions, and these were followed by M. D. Vernon in *Backwardness in Reading* (1957). As far as reading standards go the DES pamphlet *Progress in Reading* (1966) might be consulted, in conjunction with *Standards and Progress in Reading* by Joyce M. Morris (1966).

word. This condition, word-blindness or dyslexia, is estimated to be present in the child population in varying percentages. Tizard, working in the Isle of Wight, gives a figure of 1.5 per cent. Morris on the other hand refuses to accept the existence of dyslexia in the Kent population at all. Some medical workers believe that the condition is the result of brain damage at birth, others that it is due to the slow development of neurological mechanisms in some children, and others again that its cause is largely emotional.

Emotional problems and personality maladjustment are the main sources of reading failure. A poor home background with a climate of linguistic poverty of the kind Bernstein has pointed to leads to low attainment in reading. As far as remedial instruction goes, more needs to be done to diagnose the root cause of reading failure in a particular individual before effective treatment can be given. Some workers (Lovell for instance) have suggested that remedial work is largely useless with some children. Other workers, with other children, have shown that it is very effective. Progress in this field depends on our learning more about the psychology of reading.

It is a surprising fact that we literally have to be taught to see. We don't just do what comes naturally! This is simple to demonstrate in an adult merely by handing him a microscope. If he has never looked through one before he will, on looking through the eye-piece at, say, a biological specimen, see only light and dark areas. However, after a time the eye becomes able to distinguish structure. This process of learning to see can be speeded up by telling him what he is looking at: in other words teaching him to see. So, too, a child presented with a printed page for the first time sees only black lines with occasional breaks. He cannot distinguish words, let alone individual letters.

When a child starts to read he makes a great number of fixations, so many that an adult trying to duplicate the laborious process would get eye-muscle fatigue. The child also has to recapitulate the previous words and syllables frequently, to avoid forgetting them. The adult seldom recapitulates in other than very difficult material, the meaning of which is vitally important to him, such as instructions about claiming expenses deductable from income tax.

The fixations the reader makes are for the purpose of identifying words. It is thought that in doing this great use is made of context, and that the reader identifies the shape of a word and tests it against his identification of other words to see if he is correct. Only if in doubt does he break it down to examine it more closely. One can catch oneself doing this occasionally when, because of poor syntax, it is necessary to look very carefully to identify a particular word in something one is reading.

In the identification process it is the upper half of the word that is important. This too can be simply tested by placing a piece of paper over the top half of a line of type and trying to read it, and then moving the paper to cover the bottom half. The meaning will spring out in the second case, but not in the first. The Initial Teaching Alphabet was designed with this in mind, and so that transfer to traditional orthography would be facilitated.

At first the process of learning to read is slow, simply because context cannot be used effectively. Then, as more and more words come to be learned, its usefulness increases.

Schonell has suggested that, in learning, children gain clues to the identification of a word from its total pattern, using length, projecting letters and known groups of letters to aid this process. However, there is evidence that ability to recognise letter forms is important to good reading progress. (Flemming, Gates, Kopel and other workers have all shown this to be so.)

Views differ today as to the emphasis that should be placed on recognition of individual letters in teaching reading. Vernon's view is widely supported: that individual letters should not be taught until a child has gained a reasonable sight vocabulary of whole words.

However, we know that silent speech is employed by most people in reading, and this derives from the sounds that individual letters suggest. Experience with teaching deaf children to read also indicates that the link between sound and reading is a strong one. On the other hand few young children can blend words from their constituent sounds alone: *Ka-a-te* does not automatically elicit the response 'cat'. The capacity to heed sounds is dependent on mental age, but it can be increased with training.

The concept of reading readiness, for which we are largely indebted to Schonell, suggests that ability to read depends entirely on maturation and that the teacher cannot, indeed should not, do anything to encourage the process lest mental disturbance result. At one time the mental age of a six-and-a-half was said to be the point when formal reading instruction might begin. Today more research has produced less agreement about reading readiness. Children as young as two years (Doman) and as old as seven (Vernon) are said to be ready for instruction.

Methods and Means

There are some dozen or so distinct methods of teaching reading, every one of which still finds some use today, not always by trained teachers. Methods divide into three groups: whole word methods, phonic methods and methods employing some kind of adjustment, usually visual, to the material presented.

In the eighteenth century the story method was popular, the *Little Red Hen* being a popular tale for the purpose. This method obviously leads to a child learning the story by heart and reciting it word by word, perfectly. The alphabetic method was also widely used and to some extent still is, mainly by parents. It was supposed to improve spelling. It may actually have done so. But because of the irregular nature of the English language, reciting the constituent letters of a word is a barrier to pronunciation and hence to understanding.

The need for a more exacting analysis of language was felt, and in 1798 Richard and Maria Edgeworth introduced their system involving the use of 73 different letter symbols. In practice this proved far too many for effective use as a teaching system. Forty-six years later Isaac Pitman introduced the original version of the Initial Teaching Alphabet, but it found very little support at that time. Then in 1899

Nellie Dale carried out an analysis of the sounds involved in reading and devised a phonic method of teaching that required eye and ear training, and used colour printing as an aid to recognition.

The word pattern, or look/say method, which originated largely from the work of Gate, remained only a minor rival to phonics until the 1920s. By the 1940s the look/say method had become widespread. Undoubtedly some teachers thought that all that was now necessary to teach reading was a well-controlled vocabulary presented in an attractive text book, and the patience to hear children read it through. This derived from a misunderstanding of Gate's work, for he did emphasise the wholeness of the word, but as the sum of its parts. In fact he merely exchanged close visual discrimination for auditory discrimination of the phonetic approach.

A spirited attack on the look/say method took place in 1955 in the form of a book published in America, *Why Johnny Can't Read*, by Rudolf Flesch. One of Flesch's mistakes was to address parents over the heads of teachers. He was attacked in the US educational press in articles with titles like *Why Can't Rudy Read?*

Unfortunately the book was not based on very sound research. But it did succeed in doing what more serious publications had failed to do; it shook Americans out of their complacency about reading and made them take a hard look at what was going on in this field of primary education.

What evidence Flesch did offer for his statements was scanty. His basic document was a Ph.D. thesis by Donald Agnew of Duke University, in which all the third grade (i.e. nine-year-old) children in the town of Raleigh, North Carolina, where word methods were exclusively used, were compared with the City of Durham, North Carolina, where the schools superintendent was a pro-phonics man. Three hundred Durham children were involved; how many there were from Raleigh is not recorded. Eleven different reading tests were used by Agnew and in every instance except one the Durham children scored higher than the Raleigh children. Because his book was intended for the general public Flesch gave very little data about the comparability of the samples, or the experimental method used.

But Flesch had not been by any means the first to point out that American methods of teaching reading being used in American schools were deficient. Gray had done so in the 'twenties', as had Burgess and others since then, for instance, Coyle, Henry and Bloomfield.

Dr. Bloomfield, a linguist at the University of Chicago, and his collaborator Clarence Barnhart, became convinced that the casual look-and-say approach, as it was then used in US schools, was not based on sound linguistic or psychological principles. They began developing what is now called the Bloomfield System in 1939. This was tested, mainly in Roman Catholic schools in the Chicago area, during and after World War II.

The Bloomfield System, which involves a vocabulary strictly controlled to give a regular grapheme-phoneme relationship is now presented in a series of nine unillustrated readers. This is backed up by teacher material and a specially designed ABC for use by the child before he begins to read. In the early readers there are no

irregular spellings and these are progressively introduced through the nine books. In all the system contains five thousand words and takes a year and a half to three years to complete, depending on the child's ability.

Describing the basic idea Bloomfield wrote: 'We intend to apply phonetics to our reading instruction; this does not mean that we are going to try to teach phonetics to young children'.

Critics of the Bloomfield work pointed out that the vocabulary a child was fed with, especially in the initial stages, was unrelated to their interests, and too much concentrated memory work on his part was needed. In the UK too there was a reaction against extreme forms of phonic readers which lacked interest and connection with children's normal vocabulary. (At their worst such readers included phrases such as 'An ox is on it'.)

The scheme developed by Daniels and Diack, like the Bloomfield system also used the principle of a structured vocabulary in which only regular spellings of sounds are introduced in the early stages of learning. These workers also carried out a detailed analysis of the methods used in reading teaching before embarking on the design of teaching material. They were convinced that the whole word and sentence methods were unsound psychologically, but they were also critical of the phonic approach as it was then used, on the grounds that the individual letter sounds change when in combination with other letters in a word.

It was to reduce some of this tedious labour, and to structure the reading material in a meaningful fashion, that Dr. Gattegno developed his reading system *Words in Colour** Dr. Gattegno has claimed that it takes 35–40 hours for a normal five year old child to master his scheme and to acquire full literacy. This time should be spread over a period of not more than six months, he says, to avoid too slow an introduction of new material and hence a fall in interest.

In developing his scheme Gattegno carried out a careful analysis of the language into its constituent sounds. He then indicated the sound, whatever its spelling, by a colour. This involved using 41 colours in all. These colours are not used in books associated with the scheme, but only on charts for classroom use. Another colour method, colour story reading, differs from the Gattegno method in using only three colours and incorporating black letters on coloured backgrounds.

The initial teaching alphabet (*ita*) is at present the only method in use in English which involves a complete re-design of the material to be read. In fact it is not a method but a medium, to which look/say and phonic approaches can be applied. Main opposition to *ita* derives from the fact that its use involves learning something that later has to be unlearned.

Twenty new symbols are added to 24 letters of the existing alphabet. The intention is to remove difficulties such as those associated with the sound ōō, which can be written in eighteen different ways in English. The *ita* is said to be 95 per cent consistent for sound/symbol

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* See *Reading With Words in Colour* by Caleb Gattegno (1969).

relationships in English generally, probably more consistent still for children's literature.

In 1961 a reading research unit was set up at the University of London, under the direction of John Downing, to investigate the new alphabet in use. This unit closed in 1967. In the first *ita* experiment 89 experimental classes and 69 control classes took part in 24 LEAs throughout the country.

From this experiment Downing concluded that children taught by *ita* were able to read and spell better by the end of the third year of school than those who had been taught with traditional English from the beginning, i.e. that the traditional spelling of the English language is a barrier to children learning to read. He found that a setback did occur at changeover from *ita* to traditional orthography (*to*) but that this was temporary and that progress continued after transfer was complete.

The questions teachers most wanted answered about *ita* were obviously: 'Does the new alphabet facilitate the progress of learning to read for children in the lower ability ranges?' and 'Does using the alphabet have an adverse effect on spelling in traditional manner?'

In answer to the first question Downing wrote, 'The slower-learning children do begin to show some benefit from *ita* at the end of the third year but the poorest ten per cent show negligible improvements in test results.

As far as the second question was concerned, for word recognition using the Schonell Graded Word Reading Test for *ita* and *to*, the *ita* group had *to* scores at the beginning of the third year which were significantly inferior to those they had achieved on the *ita* version of the same test more than half a school year earlier. Thus the *ita* group's *to* score on the second test represented no progress or even a regression in comparison to their *ita* score over half a year earlier. However this deficiency seems to be made up later, for Downing wrote, 'By the end of the third year the *ita* group achieved scores for accuracy, speed and comprehension in reading which were significantly superior to the *to* from the outset.'

As far as spelling goes, and this is something very many people have been sceptical about—parents and teachers as well as educational psychologists—the results indicated that pupils who had originally learned to read and write with *ita* had a *to* spelling attainment superior after transfer to those who had been using *to* from the beginning.

The *ita* experiments were criticised on the grounds that Hawthorn effect, by which an experimental subject makes an extra effort in whatever he is doing, had played a part in producing gains in reading progress with *ita*. Southgate further suggested that a factor she called a 'drive' had influenced the results. The use of this word was unfortunate, for drive in the psychological sense was not meant, but, as she put it, 'a new surge of inspiration through the teaching of a subject. It ferments in the teacher and bubbles over to the children who are thrust forward on its waves of enthusiasm.'

Southgate claimed that this 'drive' is not the same thing as the Hawthorn effect. She suggested that a 'drive' might be excluded by adding to the existing experimental groups other groups using modern

teaching schemes such as *Fun With Phonics*, a programmed reading kit, *Royal Road Readers* and *Words in Colour*. The control group might be selected classes in which there was no change from normal methods and books. Gains could then be seen to be the result neither of teachers' nor children's enthusiasm for something new.

Concern over differences in the experience of experimental and control groups, and lack of control over what Jones called 'incidental variables', led Downing and his team to launch the second *ita* experiment in 1963.

Jones defined 'incidental variables' as 'All those features which may affect reading attainment other than the one being studied.' She pointed to three groups, those relating to the pupils (age, sex and home background) to the school (number of pupils, pupil-teacher ratio) and to the teacher (professional ability, training, experience and personality). Controlling these elements obviously meant a far less natural classroom situation than had existed in the original experiment. Thirteen schools took part in the second experiment, experimental and control classes being matched and in the same school.

Downing and Jones concluded that the results of this experiment broadly confirmed the first experiment. Pupils beginning with *ita* made more rapid progress and achieved superior results on tests printed in *ita* as compared with pupils beginning with *to* and being tested in *to*. (This finding applied to the results of the Schonell Graded Word Reading Test, and to the Neale Analysis of Reading Ability, in respect of accuracy, comprehension, and speed.) Downing concluded 'So long as *to* is used for beginning reading and writing, one must reckon that children are more likely to become confused about tasks of reading and writing than they would be with a more simple and more regular system of English'.*

The newest approaches to reading are the programmed material prepared by Stott of Bristol University and designed for use with secondary non-readers, and the Initial Literacy Programme, which is part of the Schools Council linguistics and English teaching project. This method is designed to develop a child's comprehension naturally out of his parents' habits of speech and reading, and is a co-ordinated scheme involving writing, as well as reading, stemming from speaking and listening.

Most reading teachers today use what is called a mixed method, combining something of look/say with a phonics approach of some kind. Experiments to determine the relative effectiveness of different teaching methods have been going on since the 1920s and will no doubt continue. Unfortunately, in this research, few investigators have been sufficiently careful in ensuring that differences in results have been due to teaching method and not to the skill of the teachers, the attributes of the children or some other characteristic of the school. Methods too have often not been clearly defined, and uniformity of title often does not mean uniformity of method.

Researchers have taken elaborate precautions to control some variable

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* For further reading see: *The Ita Symposium* John Downing *et al* (1967); *Ita and the Teaching of Literacy* by John Sceats (1967); *Ita: an Independent Evaluation* by F. W. Warburton and V. Southgate (1969).

and then introduced a quite unnecessary complication. For instance Valentine carried out experiments with two groups of children, ages six and a half and eight, from which he produced quite convincing evidence that children taught by the phonic method do better than those taught by look/say, 'both in reading words previously seen and words previously unseen'. Valentine made sure of the initial comparability of his samples, but on the basis of the children's ability to read a Greek and not an English alphabet.

The effect of home background on reading ability was first pointed out by Winch in a monograph published in 1925 which also emphasised the importance of phonics in teaching. Winch examined both alphabetic and look/say methods together with phonic ones, but his study was later criticised on grounds of its limited scope and short duration. The phonics versus whole-word methods controversy has been made more complicated not simpler, by the passage of time and accumulation of evidence. The problem has now become not simply phonics versus no phonics, but the more complex one of when, how much, for what purpose, and to whom phonics should be taught.

It is now known that the ability of young children to distinguish sounds (auditory discrimination) is acquired earlier than that for different objects (visual discrimination) and that both are progressively acquired. Words can thus be perceived by young children more readily than letters, and widely different sounds more readily than similar ones (*duck* and *man* before *had* and *hat*). Hence we arrive at a concept of phonic readiness.

The view has gradually emerged that there is a link between the value of phonic method and intelligence, so that, with children of high intelligence and good economic background, it is useful to start phonics earlier. The work of Dolch and Bloomster and later of Schonell confirms this.

In 1947 in *How to Increase Reading Ability* Harris listed five important *aspects of* phonic readiness.

1. The child should be able to hear the difference between words that sound somewhat alike.
2. He should be able to detect whether two words begin with the same sound and supply two or three other words that begin with the same sound.
3. He should be sensitive to rhymes, able to pick out words that rhyme, and supply words to rhyme with a given word.
4. He should be able to hear similarities and differences in word endings and middle vowels of words.
5. He should be able to listen to the pronunciation of a word sound by sound, and fuse or blend the sounds mentally so as to be able to recognise the word intended. Research suggests that this will not be before six or six and a half years.

Experiments designed to find out more about phonic readiness have indicated that formal phonic training should be delayed until a certain maturity has been achieved. This means that some children at seven plus, or even older, are only just ready to receive systematic phonic instruction, but that if this is not given, satisfactory reading progress

may not be made. Daniels and Diack, for instance, have shown that the modified phonic method they used in Royal Road Readers is more valuable in the first year of the junior school than a mixed method.

The ability to read and the ability to comprehend are not the same thing by any means. It is possible for an adult to learn to read a foreign language without understanding a single word of it; so too with children as far as their own language is concerned. Morris, in her investigation of primary schools in Kent carried out for the National Foundation for Educational Research concluded that children aged seven to eleven who had attended schools which concentrated on systematic phonic instruction at the infant stage, were markedly superior in tests of reading *comprehension* to those who had been pupils at schools where phonic training had been given incidentally and without emphasis.

But it is with backward readers that most concern about method is felt by teachers. What is the best approach with the least well-endowed?

Conduct and Ward showed that after ten months of special phonic teaching (with apparatus to supplement their ordinary reading of books) an average gain in reading age of 1.5 years was achieved for the 44 pupils involved in the study. As so often has happened in this field Burt and Lewis then demonstrated that method made no difference to reading improvement.

The conclusion Conduct and Ward drew from this seeming anomaly is that most studies had tended to concentrate on the individual child and not on the class. Almost any method or combination of methods used for individual concentrated tuition is effective.

Unfortunately this cannot be taken to mean that every child will respond effectively to remedial teaching and that all that is necessary is some adjustment in the pattern of method, material or medium to achieve success.

Vernon puts reading failure down to a failure in reasoning that precludes some children from analysing the printed words systematically, associating sounds to the constituent letters, and synthesising these to form total sounds. He may well be right. Until more is known about the fundamental processes involved in learning to read we will not achieve the one-hundred per cent literacy that must be our aim. In practice today the better teachers try to adjust their methods to children's individual peculiarities. If a child appears to be poor at visual discrimination a reader emphasising phonics is used. Thus in practice the good teacher uses mixed methods, and it is on the teacher that success with reading ultimately depends.

'Science for all' begins in the primary school and should continue in the secondary school.

Science in School

N. BOOTH

Science is taught in school for two main reasons. First, to increase the scientific literacy of the whole population, that is, to give so far as we can in the time available some knowledge and understanding of the structure and processes of science and an awareness of its potential. Second, to teach at each stage that body of knowledge, that is of facts, generalisations, skills, and approaches to learning, on which succeeding stages can build and thus ensure a continued supply of scientists, technologists, and technicians.

What has been wrong with school science so far, and indeed what is still wrong with most of it, is that almost if not quite all the emphasis has been on the second of these aims, with the result that the only sensible thing to do with, say, O-level science, if science is not taken in the next stage of education, is to forget it. And, of course, very few have tried to pretend that A-level science was anything other than vocational. Nor has the diet offered those who were not until recently counted among the examinables been very different and, where it has, it has generally been regarded as a matter for regret rather than congratulations.

Setting aside the influence—a very powerful one—of the universities on all this, not because it is any less now than it ever was, but because there are welcome signs that attitudes are beginning to change, the biggest single factor is the attitude of the science teachers. There is great satisfaction in an intellectual, academic treatment of a topic in science, and this is a satisfaction which any good teacher will want to share with his most able pupils. What is now being attempted is an adjustment of the balance of the science curriculum to provide for all rather than for the relatively few and the process is beginning in the primary schools.

The Primary Stage

There must always have been teachers in primary schools who taught science. Certainly the headmaster of the little Church of England school to which my own children went taught them something at least of science. He taught them not just to see that a lens could collect the light and heat of the sun and concentrate them on a point but to be curious about why it did it, and why the glass had to have a special shape before it could do so. Not only did he teach them to see the Great Bear but to be curious about why it revolved around the Pole Star, and about the men and women who had worked to find out why, of the mistakes they had made, and that what made the game exciting was that there always seemed to be another question beginning with Why. He also taught them that very often when a question beginning

with Why had been answered someone put the answer to practical use. Knowing the Why of the lenses gave us spectacles and telescopes and microscopes.

The headmaster of one of the first schools I visited as HMI taught his children science. He taught them to be curious about the behaviour of the stuff that filled the bottle when he drove the water out of it by squirting a soda water syphon into it. He taught them to be curious about the difference between the behaviour of his balloon (filled with hydrogen) and their balloons which they had blown up themselves.

These I suppose were the exceptions, they were just naturally good teachers, themselves full of curiosity. Possibly too they were the products of simpler times before science took to giving itself a capital S and when teaching was something you worked out between yourself and your children. There are of course still many teachers like them and they are to be encouraged whenever we find them. The problem is now to get more doing the same. It would be a fairly simple matter to select a few topics and show teachers in some detail how they might be taught, but the children themselves ask questions and we want very much to encourage them to do so. A child will say 'why does one balloon rise whilst the other falls?' but we want to encourage another question: 'Please Miss, can I try to find out why one balloon rises whilst the other falls?' and this is a very different matter, making considerable demands on the knowledge and ingenuity of the teacher. She needs to be aware for example that there are possible hazards to guard against, to know that if you put a light to a hydrogen balloon there will be inevitable consequences. There are other things too which she certainly needs to anticipate.

If the balloon which rises is red and the one that does not is blue, then the answer might well be that it rises because it is red, falls because it is blue. This must now be tested not as a specific statement since, after all, the red one did rise and the blue one did fall, but as a general statement. And the design of the testing experiment should ideally be by the child, arrived at and accepted as valid after discussion with the teacher. Should the teacher inflate all balloons, to all appearances, to the same volume? Should they all be the same shape? Should the child only test those factors which occur to the child, and if a child says at once in answer to the Why 'because the blue one is heavier than the red one' or if, when all other possibilities that occur have been exhausted this is the only one remaining to be tested, what if any is the next step? How, if at all, should the teacher introduce quite a new factor, that whether a thing floats or sinks, rises or falls, is not only a consequence of the weight (in fact of the average density) of the object but also of the medium in which it is placed? If the process stops because of growing complexity for the child or, just as likely, for the teacher, does it matter if we are left with an unacceptable notion? Clearly it does.

We must not be surprised if many primary school teachers, with too often only the sketchiest of knowledge and understanding of science themselves, take their time over introducing this approach.

Nevertheless there will be an increasing number of children who, by the time they are ten or eleven (some later) will know that 'doing science' means learning to make observations with a conscious looking

for patterns of behaviour and, when a pattern is detected, the search for an explanation.

It is, however, this 'explaining' which really marks the onset of the secondary phase in science education, for the explanation must not only rationalise what has been observed but it must also extend the pattern of behaviour which it rationalises and what is more it will usually suggest ways in which we ourselves can extend the pattern. Once the physicist had rationalised the motion of the moon about the earth, the planets about the sun, the way became clear for us to add satellites to the pattern. Once the chemist had rationalised the peculiar proportions in which carbon atoms combined with hydrogen atoms, the way was clear to the synthesis of literally thousands of new substances. It is in the secondary phase too that it becomes apparent that no rationalising concept is ever quite big enough to contain all the data relevant to it, and that the search is always on for an extension of the old concept or, now and then, for an entirely new one. This very briefly is what I should describe as the essential nature of the first of the two aims of school science.

In addition to this, school science has its part to play in the training of future scientists, technologists, technicians, and the rest of us who must increasingly learn to cope with situations and products which are the direct outcome of the activities of scientists and technologists. There are facts to be known, that for example 230 volts from the mains is a very different matter from 230 volts from a dry battery; that internal combustion engines can be designed to operate perfectly well without requiring fuel containing lead additives, and so on. There are skills to be acquired, rationalising concepts to be understood, and, involved in all these, the ability to use the language and processes of mathematics as a means of precise statement and ambiguous argument.

The Secondary Curriculum

The problem in devising the secondary school science curriculum is to achieve a balance meeting all these demands. The notion that science was 'for all' resulted in the general science movement of the 1930s, but the movement by and large failed because O-level passes were still required primarily to indicate a level of acquisition of facts and skills on which further vocational training (whether in the sixth form or not) could be based. The facts and skills of science increase all the time and if this was what school science was about then more and more time was needed to do it and more and more specialist teachers to teach it. We thus had, and have, the situation that all but those considered to be the least able are taught two of the three or all three separate science subjects whilst the least able had a course of the simpler bits of the three separate sciences. What was wrong with this was that the former demanded more time than a balanced curriculum could afford so that we have produced the ridiculous situation that our most able pupils have the narrowest educational diet (whether they are scientists or modern linguists), that the matter dealt with was for the most part almost archaic with only token relevance to what was happening outside the walls of the laboratory, and, above all, that understanding of the processes, the search for patterns and rationalising concepts, seldom appeared, in fact the processes too often stop short at the acquisition of the data which precedes the pattern

making. What was wrong with the latter was, and is, that the stuff is even more archaic and for 'seldom' read 'scarcely ever'.

If all we were concerned about was the introductory stages of science for future scientists then the old diet is not without its merit. Those who persisted have in fact made some of the best scientists and technologists in the world, but we need to produce more of them than we do and considerably more than we seem likely to do in the future if present trends continue, and this is not only for our own consumption. If we really do hope as a nation to continue to contribute to international affairs, one major rôle we should share with other highly developed nations is in the supply of scientists and technologists, doctors and technicians, etc., to the under-developed nations. We have however to do more than this. Science and technology are enterprises far too successful to be left to the scientists themselves, which is why the most urgent aspect of school science is 'science for all'. And for these the old diet will certainly not do.

There are several points of general agreement about what kind of science should be taught in our schools. First it is generally agreed that the nature of the subject should be observation of behaviour, detection of patterns of behaviour, formation of concepts, extension of the pattern (which may also be described as application of the concepts to new situations including 'technological' ones) and, associated with these such matters as the appreciation of the significance of individual observations and the rôle of the model.

There is agreement too that much of the actual material should be modern to the extent of being the science of the 20th century, even though this presents major problems in the conceptual field, for much that is modern requires modern concepts for its rationalisation and these, certainly in their quantitative aspects, are frequently complex and involve mathematical argument beyond the capacity of the majority.

There is a great deal of agreement too with the proposition that the material treated should be drawn from the three major fields of scientific activity, that is from biology, from chemistry, and from physics. There is less agreement about the proportions each should contribute, some arguing that one or other subject lends itself more readily at school level to the teaching of the scientific processes, others that one or other subject is of greater significance than others to life outside the laboratory, others again that because it is an essential part of the scientific process to incorporate discrete patterns of behaviour within an all embracing general concept, and that, because this process is already well advanced towards the incorporation of that behaviour we call physical and that we call chemical, but less well advanced, (except in the field of molecular biology) towards the incorporation of biological behaviour, we need only distinguish at school between the so-called physical sciences and the biological sciences. This is 'science for the enquiring mind' and is worthwhile, in itself, for all, given that teachers adapt pace and range to the capabilities of their pupils. The other three periods will be devoted to topics selected on grounds similar to those set out in Schools Council *Working Paper No. 1.* that is on grounds of their significance to the pupil and their relevance to everyday life, plus one other important ingredient which

might be called 'science for action' and is the kind of science on which Schools Council Project Technology can be expected to offer guidance.

Certainly it is unrealistic to go on thinking in terms of separate science subjects for all as for example the Nuffield O-level projects have done. There is general agreement that the first two years of a secondary course should be general in nature and concerned with extending the processes begun in the primary schools. It is after that that there seems to be every conceivable shade of opinion and all I can do is to add my own. In my view for the next two or three years science should be allocated six periods in the weekly timetable in two blocks of three. The first block will be devoted to physics, but a physics which deals with the establishment of a number of physical principles and their application to physical, chemical, and biological systems.

It has always seemed to me that the fifth year of secondary schooling will be best considered as the beginning of the next phase rather than as the ending of the first. That is to say choices would now be made in terms of vocational potential. If continuing in full-time education to 18 years old, I would argue strongly for this to be in the sixth form of the school. And the pattern I hope to see us work to is very much on the lines of those suggested in the report of the Dainton Committee with our most able boys and girls continuing their education on a broad front all the way up to 18 and with more specialised courses for the less able. These more specialised courses would be taken in the sixth form if as part of full-time education or in the colleges if as part of part-time education.

Technology is changing the world we live in. How do you educate the young to find their place in it?

Education and Technological Change

ELIZABETH HALSALL

The technological developments of the first industrial revolution transformed every country where it took place from a largely subsistence and family-based economy, from a peasant or semi-feudal society, living on and living off the land, into a mainly urban society, with a proletariat tied to the demands of machines and a family life radically altered by the departure of the men for the factory and the children for the school. In education it made universal literacy inevitable.

We are now undergoing a second technological revolution, with social consequences as vast as those of the first, a revolution rooted, even more than the first, in the discoveries of science. One half of the world's knowledge has been discovered since 1940, and at present knowledge is doubling every ten years. Since the start of the first industrial revolution working hours in advanced industrialised countries have been halved. With the present speed-up in the growth of knowledge and invention, they are likely to be halved again by the year 2000. Indeed C. P. Snow has suggested that, by then only 10 per cent of the population in advanced industrialised countries will need to work and that those who do will be the best educated and the most gifted. Probably many of these people will have a teaching function; already 'paid learning is becoming both the dominant employment and the source of new wealth in our society'.

However this may be, the trend in the type of work that will be done is clear in some respects. Recently great new industries have grown up, with a high research content and producing large quantities of articles quite unknown fifty years ago. These industries require ever larger and more technologically complex plant and, for their operation, types of skill and knowledge quite different from traditional skills. Changes in the nature of traditional crafts are taking place also, as new inventions develop that require skills cutting across two or more of the traditional ones. Hence many of the apparently senseless 'who does what' disputes. We can expect a continual change and obsolescence of skills in the industrial field and probably in other fields as well, and therefore a continual need for retraining, unless men are to be thrown on the scrapheap by the age of 35.

With the advent of automated work processes in many industries manual work is declining in quantity. More and more people will have to be employed in the professions and sub-professions, in administration, in commerce and the distributive trades and in all those occupations in which person-to-person relationships are important. For many of these jobs a good education is vital. In the USA at present about 50 per cent of the working population are engaged on jobs not connected with industry or agriculture and in the more

skilled of these occupations there is often a shortage of candidates.

One of the less desirable consequences of the industrial and political revolutions of the nineteenth century has been the development of the 'rat-race'. The decline of privilege led to the development of the public examination system in Western Europe around 1800. It was then that the school really began to be taken over by ambition as an instrument in the pursuit of wealth and power and, more recently, of bare security. Knowledge is now power and this is well understood in developing countries, where there are massive demands for primary education, in advanced industrialised countries, where secondary education of the same kind for all is now the watchword and in the USA where a college education is beginning to be looked on as a right. Education is the main gateway to power and responsibility and the pressures to obtain education begin to outstrip the capacity of the economy to provide educational opportunities. A large failure rate or weeding-out process is the inevitable result. Mankind may well have to face the fact that, even from the economic point of view, the educational rat-race is no answer to the problem of creating and maintaining social structures. A few of the young are already giving the world notice that they intend to opt out.

Change of Skills

The changes in the kinds of skills or the kinds of responsibilities demanded of men in a continually innovative industrial system may well require changes in the structure of authority in industry. Possibly, the typical hierarchical structures of old style industry may not fit the needs of the new industrial processes. Some research suggests that, whenever an industry is continually innovative, each man has a special contribution of his own to make and fits better into a team, the members of which act mainly by consultation with each other, by groupwork and cooperation, than into the present boss-foreman-operative structure. If this new way of exercising authority, this new life style, were to become generalised, there would be problems of adaptation for education.

If skills become continually obsolescent, men will frequently change jobs and therefore there will be more frequent changes in place of residence, as already in the USA. Does this mean that if children's work in school is not to be dislocated we shall have to have more uniform syllabuses and curricula, or at least that the use of programmed learning to help children to make good any gaps in their schooling will have to become general?

The mobility generated by the second industrial revolution will not be confined to movement inside national boundaries, especially in Europe, where individual countries are so small. Better and cheaper means of transport, large international mergers of firms and the development of international firms, the creation of the Common Market and the movements now beginning both to make national degrees, diplomas and certificates internationally equivalent (and their holders thus internationally employable) and also to extend certificate-bearing examinations to more and more children; all these will make for much greater movement across international boundaries than in the past, with serious implications for the teaching of languages, for

example, or the establishment of an international *lingua franca*. The glitter of its material prizes will also bring into the Western world many more immigrants from the underdeveloped countries and it remains to be seen whether present restrictionist policies on immigration will be successful in their aims or merely promote profitable traffic in the smuggling of people rather than of goods. Our immigrant problem is here to stay and demands educational measures both for the immigrants themselves and the populations amongst which they live. It ought also to stimulate sympathetic and helpful consideration of the appalling problems of developing countries themselves.

Paradoxically the increase in movement is being parallelled in some ways by a decrease in communication. The invention of the small portable engine and with it the motor-car has made it possible for us to live amongst people 'of our kind', in practice to confine our social intercourse to people belonging to the same social class and interest-group. With the development of large residential areas and council house estates the middle class and the working class meet less than they did formerly. Fantasy then takes the place of experience and mental stereotypes, usually unfavourable, of the groups we do not meet take the place of real people, to the detriment of human relationships and community feeling. Where there is no contact there is no understanding. In increasingly making known the views of all sections of the community, some television programmes are now exercising a vital educational function.

The social and educational consequences of all these new technological trends are rather difficult to forecast but it seems probable that they will be at least as great as those of the first industrial revolution, and the needed changes in attitudes as vast as those when the nomad took to crop-growing. The experience is likely to be painful.

Let us spell out what this means in education. Traditionally, education has never looked very far ahead because society has changed only slowly, but in a rapidly evolving situation our strategy must be different. The children whom teachers now have in their charge will still be alive in the year 2020. Present students in colleges of education may still be at work in the year 2010, teaching children who will still be alive in the year 2070. Attitudes acquired in youth are difficult to eradicate, methods of teaching are difficult to change. But society will be changing rapidly.

Clearly, if workers at all levels are to cope adequately with rapid change and with re-training programmes in later life, their education at school or university can no longer be thought of as terminal in character. It must be of such a kind as to make them able and willing to acquire new knowledge, skills and techniques later, it must equip them with basic tools such as good command of the mother tongue, some command of mathematics and some understanding of our society; above all it must teach them to be flexible and adaptable in their attitudes to the new demands made on them. A school examination or degree certificate has already a limited validity in fact; the knowledge required to obtain it is soon outdated. A few institutions already recognise this *de jure*: for example, the diploma in reactor engineering awarded by the French Atomic Energy Authority has a life of five years and is revalidated only by attendance at extensive

refresher courses and by further examinations. This type of retraining can be expected to become common at all levels of work, and for every age group, as jobs become obsolete and workers have to retrain for other skills. It will impose rather new kinds of stresses, especially upon the middle-aged. We are heading for a situation in which education and retraining take place throughout life; we are heading for an educative society.

At the same time the second industrial revolution gives us the opportunity to incorporate into our culture a better understanding of the technological aspects of our world and a greater respect for technological skills than our bookish forbears felt during the first industrial revolution and afterwards. The social and academic distinction between intellectual and servile work inherited from Greece and Rome has little relevance in an egalitarian society, all the more so since work of a technological kind often demands intellect of a high order. If we incorporate into our education a better understanding of technology and of the physical attributes of the world and its materials we have a greater opportunity to produce 'whole men' than any previous generation, since this is an area of experience which education has seriously neglected.

An inevitable consequence of the trend for more education is a demand for more and better trained teachers—and it is already probably true that the most common problem in education the world over is the shortage of teachers. It seems likely that one day more people will be employed in teaching than in anything else.

It is hard to foresee what will happen to the rat-race or to status-hierarchies generally when most people work only for, say, four hours a day and only the ruling group or those aspiring to rule find themselves obliged to work hard. But it does look as if children at least may continue to be hard worked, because of the ever-increasing pressures to learn more as the world comes to know more. The only alternative would be to extend their period of education and therefore of dependence. It would in fact probably be to the advantage of society to keep the adolescent off the labour market. Education may be the only alternative to adolescent unemployment, the danger of which can be seen in the race riots of Rochester and Detroit, often sparked off by unemployed negro youths. The unemployed are likely to be those children whose experiences of failure in school have bred dislike of education and caused them to leave school early. It is probable that society will look to educators so to reorientate their methods and procedures as to prevent the sense of failure developing in our less able children. This may well be the greatest responsibility now facing educators and the most difficult one to meet. Here teachers will play a crucial rôle. Educational research may attempt to evaluate the relative worth of different new approaches but the really creative work of developing such courses will be done by teachers. The experimentation carried out in the classroom will probably be as important as that of the scientist in his laboratory. At present the saddest thing about education is that it is rejected by those who are most in need of it. The price of our failure to solve the problem of teenage indifference to school may be serious instability in our society. Equally the failure to find for young people who remain in the educational system opportunities for service and responsibility, such as teenagers had in

the days when the money they earned was needed to help support the family, will breed in them either selfishness or frustration of their idealistic impulses. Neither is good for the body politic.

The response to increased geographic mobility in Europe has already begun in the educational field. The Common Market community has started a series of 'international schools' for children of the workers of the six nationalities involved in various work schemes. These children become at least bi-lingual and may eventually take an international *baccalaureat* or GCE, moves towards the creation of which have already begun. A great increase in the number of these schools is to be expected as time goes on.

Equally there has been some response to the problem of immigration from less developed countries, but even more will have to be done in schools to inculcate attitudes favourable to coloured immigrants.

Clearly there will be many personal difficulties arising from this process of continual innovation and continual obsolescence. When, for example, people change their place of residence frequently, their attitudes and behaviour are much less influenced by the local community than in the old village or the old-style industrial town. Attitudes have to be deeply internalised to withstand the lack of pressure to at least conform to a certain standard of behaviour. It may be for this reason that the young are more and more viewing the old demand for unquestioning obedience as irrelevant to their future needs. They have to work their own way to a set of standards to a greater extent than past generations if they are to be able to stand by them in an indifferent world.

Strife and Unrest

The speed of change will not make for peace and stability, either at the local or at the international level, but rather for strife and unrest. It puts a premium on the development of people whose characters are both stable and flexible and whose minds are open and well-informed, more than formerly. Otherwise human beings will not be able to adapt to the changes and still remain on an even keel.

We have also to grapple with the fact that knowledge is now being acquired in different ways from those of any previous generation. All generations have learnt by drawing on actual personal experience within a very narrow field. Recent generations have widened their field of experience by learning through the medium of print and some people have been conditioned by print in their modes of thinking to a sort of detachment not known before and perhaps highly significant for the advancement of science. The present generation has now widened its field of experience by the vicarious personal experience that comes with daily television. The world really is now our oyster. We are drinking it in and trying to cope with the resultant indigestion.

The television set produces experiences far more likely to result in excitement, disturbance, and self-involvement than those produced by the printed book or even the radio set, without providing means to relieve the resultant tension. How can a generation which has known nothing else fail to be conditioned in its modes of thinking and reacting in a way which will make it very different from the present

older generation? As a result, do we or do we not need to teach and handle young people in a different way?

In the future most people are destined to have abundant leisure time. The old leisured class will be replaced by the new leisured masses. The old leisured class had the advantage of a cultured background. The new leisured masses will need to acquire a more serviceable culture than the one they have at present. Unless we make available to children in schools even more music, more art, more crafts, more games, more recreational pursuits of all kinds, in class and out of it, we will breed a generation that cannot take advantage of its abundant leisure. Some American workers who now get three months' paid leave complain that they don't know what to do with their time when they get it. Yet it would be possible so to educate our children that far more would be fitted to lead the sort of life led once by the freemen of Athens—and we have no reason to suppose that the latter all had high IQs—so to orientate our culture that it acquired something of the brilliance of the court of the '*Roi Soleil*'. Stargazing perhaps, but not so starry-eyed as it appears. Prior to the time of Louis XIV the French court was hard-drinking, hard-swearing, ill-educated and uncultured.

One final point. When most people have a lot of free time it may well become clear that, spiritually, Western civilisation is bankrupt. The West is geared to work as the hub of existence. Yet man cannot achieve his full potential through work alone and when working he is always a functionary to a purpose other than himself. When that purpose is one that is more than himself, he may find self-fulfillment. But too often men work, and have to work, as a functionary to a purpose less than themselves: in Voltaire's biting words about a contemporary 'he was born a man and died a grocer'. Now one may be born a man and die after a lifetime of screwing bolts into nuts. Or work for work's sake may result from a deep sloth, a 'despairing refusal to be oneself'. At the same time much that passes for education for leisure is too superficial; it merely solves the problem of too much free time badly spent. Shorter hours of work and well-filled longer hours of leisure do not make a life. They do not even make an identity, much less a man. Perhaps we should make more sense of this fact if we revised our whole concept not of work or of service, but of leisure. We could perhaps re-define it as an attitude, a state of receptiveness, 'listening to the essence of things'. Without this also, in any meaningful sense, man is not truly man.

What has the conservation of the countryside to do with education? At the beginning of European Conservation Year the author suggests some answers.

Schools and the Countryside

O. J. E. PULLEN

A German historian once wrote 'You cannot understand the English without turning the pages of White's *A Natural History of Selborne.*' In this country people of all classes, country squires, parsons, gamekeepers, gardeners, artisans and professional men, have shown a great interest in Nature and have assisted in charting flora and fauna and archaeological features. The miners and weavers of Lancashire and Yorkshire formed the backbone of many northern natural history societies. The tradition continues. Many factors have combined to nourish it, not least among them the growth of field studies in schools. This is 1970, a year of stock-taking in the field of conservation. Our own Nature Conservancy is approaching its 21st birthday and 1970 is being celebrated as European Conservation Year.

Field studies in schools have as one of their objectives the encouragement of children to become fully aware of present threats to our living environment and to wild life, and to be conscious of their duty to appreciate something of the complexity of the problems these raise.

The 'Object Lesson' provided the earliest form of nature study in the elementary school curriculum. It was the Froebel movement, however, which fostered learning by discovery in nature study, and this is still the principle animating those who wish to see science spreading in primary schools. An influential group of lecturers in training colleges included the redoubtable Miss Von Wyss who is said to have carried a nest of wood ants regularly across London in her handbag. Another pioneer was Miss Rosalie Lulham whose great work: *Introduction to Zoology through Nature Study*, was only half completed when she died. It was enthusiasts like these who came together to form the School Nature Study Union (now the Natural Science Society). It did much to foster the teaching of nature study in schools. Its motto 'To see and admire; not harm and destroy', might well serve as the rallying call for European Conservation Year.

Promoting Conservation

Ecology has in 60 years become a major activity in biological sciences. Ecologists believe firmly in the value of studying plants and animals in their habitats. The early pioneers would have been delighted to see how their work has blossomed into the well-established conservation network designed to protect interesting habitats, a network which Great Britain justifiably claims to be an example to the world.

Landmarks in the history of these developments are worth recording. Many associations played a part, notably the Royal Society for the

Protection of Birds which was early in the field in the establishment of reserves to protect bird rarities.

The Hon. Charles Rothschild founded the Society for the Promotion of Nature Reserves in 1912, and, in 1915, he was behind the publication of a list of suitable places for reserves. Some twenty years were to pass before the first of these was established. A few years earlier the Council for the Preservation of Rural England was formed.

National Parks were recommended in the Dower report of 1945 and by the National Parks Committee of 1947. As a result the National Parks Commission and the Nature Conservancy were established. The National Parks Commission has grown in stature and influence because of the wider powers given it under its new title The Countryside Commission. The Nature Conservancy has accomplished much in its twenty years. Over a quarter of a million acres have been designated National Nature Reserves, including a remarkable range of interesting wild-life communities, from islands in the Hebrides, mountains and moorlands in the North, to East Anglian fens, areas of chalk downs, stretches of sea coast and small reserves in built-up areas. In addition it has a hand in running many Forest Nature Reserves in co-operation with the Forestry Commissions and some landowners, and has scheduled some 2,000 sites of 'special scientific interest', notifying the local authorities of these. It advises any local authorities which may wish to form local Nature Reserves and works closely with industry in a similar way.

The work of conservation is pressed forward by many voluntary associations. The Council for the Preservation of Rural England has been mentioned. The National Trust plays an important part in the properties it holds in trust for the nation, so do the Society for the Promotion of Nature Reserves and the County Naturalists' Trusts some of which are very active. The Norfolk Naturalists' Trust has a proud record. It was formed in 1926 and for 20 years was alone in the field until joined by the Yorkshire Trust. Now almost every county has its Trust.

The Council for Nature has done much in recent years to bring the many natural history societies together and to speak for their members all over the country. Its youth section supports a conservation corps which fosters and organises community service among young people, with the deliberate aim of maintaining habitats which are interesting and removing some of the eyesores from our countryside.

Ecology in schools was much helped by the foundation of the Field Studies Council in 1943. It now has nine centres and will open a tenth in London's Epping Forest this year. The centres cover a wide range of habitats, from the seashore to limestone hills. The demand for places on courses at its centres far exceeds the accommodation available. Many schools now have their own countryside centres or make use of guest houses, hotels or youth hostels in suitable areas. Some youth hostels provide special facilities to meet schools' needs. Local authorities vary greatly in the provision they make to cater for this new activity. Some convert country schools which are closing, so making excellent residential centres for pupils. Others use the camp schools set up in war years or acquire buildings for conversion.

In considering all these activities it is important to ask ourselves what we are conserving. We cannot put the clock back, nor would we wish to. We may regret the passing of predators, bird and mammal, or the replacement of choughs and jackdaws by starlings. Only the filth and carrion of mediaeval London could bring back the flocks of kites to wheel, glide and swoop as they are doing in some favoured haunts in Wales. It is more important to try to assess the influence of changes as they take place: the coming of invaders like grey squirrels and collared doves, the passing of the rabbits, the vanishing hedgerows. In the work of assessment schools can and do have an important and a live rôle. Some of these changes are unaccountable, many are a direct response to economic pressures. The enclosures gave us much of our patchwork of fields and hedges. Today one must appreciate the cost to farmers of maintaining the hedgerows, but assessing the social loss that results from the disappearance of hedges is a difficult exercise. Areas without hedges in the Paris basin are devoid of singing birds. Soil erosion is increasing as the wind barriers are removed, and ecologists teach us to respect variety in countryside communities and to beware of the dangers in mono-culture of crops if there are too few adjoining areas with varied fauna and flora to set the balance right. The presence of spiders and predator insects in Kentish hedgerows provides a pool to re-colonise orchards after spraying has destroyed insects without discriminating between those which are beneficial and those which are harmful. In the controlled environment of glasshouses growers are turning more and more to control by beneficial insects, breeding them and releasing them among the pests on their crops. Experience in USA encourages the hope that biological control of pests will be used on an extensive scale, replacing or supplementing control through pesticides.

The Second World War brought a marked change in the English countryside, a transformation from grasslands, often rather uninteresting in appearance, to vast acreages under cultivation. This swept sheep-rearing away from the Downs, but the 'golden hoof' principle is being appreciated again and there is some reversion to former practices. Myxomatosis also produced a marked effect in wiping out rabbits whose grazing habits had proved to be responsible for the destruction of many attractive plants now flourishing once again on what cropped turf remains on the chalk downs of the southern counties. Before the Second World War over half our countryside was grassland, less than a quarter was arable, a twentieth woodland. In 1944 the tilled areas had increased to almost half the total acreage, and leys, temporary as distinct from permanent grassland, had increased from 8 per cent to 12 per cent. The impact of this change is most noticeable in the Midland counties where tractors made it possible to work heavy land formerly left to grass. In Warwickshire the acreage under the plough increased from 73 to 226 thousand acres. Schools today frequently adopt farms or study villages and in tracing these changes they find tithe maps of many estates and farms make an interesting study revealing similar changes which have taken place down the centuries.

Plant breeding has transformed the productivity of cereal crops. Ten years ago the average yield of wheat would be 24 cwt. to the acre.

Now it is 30 cwts. and some farmers expect as much as 45 cwt. This is produced at the cost of some sacrifice. Just as the spread of ley farming and mechanised hay making and alternative processes of grass preservation have deprived us of the familiar sights and sounds of the hay-field and taken away the scents of new mown hay which came largely from poor quality species now eliminated, so the heavy yielding corn crops leave no room for the colourful weeds. Poppy, charlock, corn marigold and thistles, fail to survive in the competition for living space or are struck down by herbicides. Bees and butterflies miss the nectar; but we, and they, can still rejoice in the varied flora of roadside verges and rail embankments. At all costs these must be protected and we should ensure that a varied flora is allowed to flourish on the broad verges of motorways.

Rural Studies in Schools

Modern trends have taken many familiar sights and sounds from the countryside. The domestic hen has been man's companion since earliest times, but today one must travel to remoter parts to see a broody hen with a flock of chicks. Hens and roosters live more hygienic if less interesting and less natural lives in 'controlled environment' houses or in battery cages. Perhaps the growing numbers and popularity of nature trails, laid out to keep country visitors in touch with wild-life protected in reserves, is an indication of the need for museums of rural life such as those set up by the Scandinavian countries, and an example to the farming community of methods they might imitate in keeping visitors to the country informed about their activities.

Just as many schools are playing their part in laying out and caring for nature trails, so, in rural studies units, they frequently provide the sights, sounds and experiences which are less commonly found in the countryside today. Older breeds of poultry, including interesting miniature forms like silky bantams, are kept in such units, giving experiences of broodiness and natural mothering of chicks as well as useful demonstration of genetics in action. Sows with litters are commonly kept, goats are popular because of their interesting habits and their milk yields, and, in school gardens, one frequently sees plots devoted to demonstrations of the history and genetics of familiar crops like wheat and barley. Some schools have amassed small collections of bygones to illustrate changes in agriculture and horticulture.

Many more schools now care for small nature reserves of their own or undertake work in collaboration with forestry officials in areas of forests set aside for their use. Experiences here can help bring some realisation of the complex system of interacting factors involved in striking a balance in a community of living creatures, although the human mind cannot encompass in brief studies all the details of such 'webs of life'. Without this experience puzzlement can grow at the destruction of one form of life which may be needed if another is to be preserved. A modern rural studies unit in school can, in its own reserve, show on a small scale something of what the far-seeing Lawes and Gilbert provided for us at Rothamsted in the famous wilderness plot. Co-operative studies by schools of countryside which is facing the impact of major changes of use can provide the same understanding. Examples are to be seen in Wiltshire, where schools are

attempting to record the effect on their county of the construction of the motorway, or in those Buckinghamshire schools which are recording features of their countryside which may change as the new town of Milton Keynes comes to be built.

Pupils thus learn to appreciate the needs of our civilisation as it becomes rapidly more urbanised: the need for economic resources and for living-space, for homes, places to work and space in which to spend leisure time. All these exert an intense pressure on our countryside, and it becomes clear that conservation is a complex matter in which many interests have to be reconciled. Yet skilful planning has achieved, in some places, a successful blending of urban and country life. Derelict areas are being successfully used, as in Lancashire and now in Dawley New Town, to make it possible for wild-life to flourish close to the housing estates and to provide suitable recreation areas. Progress in this respect is slow and a pioneering spirit is needed. The conservation corps is a force to be reckoned with but its present strength at 1,000 is sadly small. It is disappointing to find extraction industries creating fresh devastation. Their rape of the countryside continues; but here again, some cheering developments can be reported. There is a slow spread in industrial circles of a conviction that their activities should not do permanent damage to our living environment. Money has been made available for research and development in Teesdale as a result of the decision to flood some areas for water-storage. The Central Electricity Generating Board and the Coal Board are showing an enlightened attitude in setting aside land around their installations for field studies. In so doing they are preserving habitats and allowing access to them, as at the subsidence flashes known as Alvecote Pools in Staffordshire and the Power Stations in Derbyshire and at Didcot, all of which are available for study by schools.

The Responsibility of Educators

The sociological and scientific aspects of these great challenges are very much in tune with the inclinations of many young people today. The rapid growth of field studies and opportunities for community service are factors contributing to a growing understanding of conservation, its problems and challenges, both locally and on a world scale. The idealism of youth is finding an outlet in this work, in co-operating in village studies, sponsored either by the schools themselves or by young people's and adult organisations like the Women's Institutes, in playing a part in the planning of developments which bring town and countryside closer together, and in the physical labour of opening up footpaths, caring for reserves, and working to preserve habitats like hedgerows, copses or ponds on farmland.

In the education process at all levels young people, through field and village studies which bring various subject disciplines together, are wrestling with all these complex principles of conservation. Authorities wishing to foster this work would do well to take account of the conclusions and recommendations of the Keele Conference of 1965. The main ones are as follows:

'1. Positive educational methods are needed to encourage awareness and appreciation of the natural environment as well as responsibility for its trusteeship by every citizen.

2. The educational system has a decisive contribution to make in creating this awareness and sense of individual responsibility.
3. The countryside is a rich source of inspiration and teaching material which can contribute substantially to education at all levels; field studies provide a valuable means of using and developing this educational resource.
4. Properly integrated into the curriculum, field studies can form a valuable part of the whole school course. They provide an opportunity of relating many subjects more directly to the natural environment and of fostering a deeper understanding of the forces affecting it.'

Implicit in all these questions is the need to foster two major fields of educational activity with the aim of providing fruitful experiences for children.

Firstly: Ecology, through field studies, on a sufficient scale to give some understanding of the complexities of interrelationships between man, wild-life, and physical factors; the dynamic equilibrium we know as the countryside, and

Secondly: To provide some opportunities, through rural education, including farm and forest adoption, for contact with those who make their living in the countryside, so that a realisation grows of the continuing changes which must come as man strives to live in harmony with his environment while using it to meet his vital needs.

Facilities are still far from adequate for these educational experiences to be the lot of all pupils. Any land suitable for first-hand observation of plant and animal communities whether in waste places in town, in gardens, on farms, or in woodlands and wilder country is of importance to schools.

The conservation of the countryside is important also to the teaching of history, literature and aesthetic subjects in schools. To survey the evidence of man's past activities in moulding his environment to suit his needs is of great interest and significance in bringing the past to life. Creative writing in poetry and prose turns again and again to nature and the countryside. If education is to remain concerned about transmitting a culture and a set of aesthetic values inherited from the past, then the importance of nature within the British artistic, literary and historical tradition is self-evident. In the DES pamphlet *Schools and the Countryside* there is a closing chapter on this subject in which we are reminded that "even the bookish Milton conceded that schoolboys should 'procure, as oft as shall be needful, the experience of hunters, fowlers, fishermen, shepherds, gardeners'." Milton thought it 'an injury and sullenness against Nature not to go out and see her riches and partake in her rejoicing with heaven and earth'.

Home economics is the current term for education for family life. How are the schools tackling it?

Home Economics Today

KATHLEEN MALCOLM

Early maturity, early marriage and parenthood have brought about many changes today and the school reflects the changing social emphasis. Girls have acquired a new independence and freedom; they are able to seize the opportunities offered by extended education, and at an early age have the satisfaction of setting up their own home. Girls leave school, leave home, go out to work, share a flat with girl friends or marry, and an increasing number of young married students live in flats and continue their studies. The educational implications of these trends must be recognised.

There is a growing demand for the trained professional woman. She is less likely to meet the demands of her profession if without skill in the effective management of her home and family life. Help in the home, once so nobly given by in-laws and devoted maiden aunts, is less readily available today. The married-woman-returner is a newcomer to the scene of employment and can be a tremendous asset because of her practical experience of life, her stability and freedom to devote herself to her work once she can manage her home affairs. The wife has a longer life span and may well have to provide the steadying influence needed in the family under the stress of modern living and it is the wife who is most likely to be affected by social changes. At the same time the influence of school meals, of works' canteens and habits of eating out may be reducing the housewife's pride and responsibility for feeding the family. Yet in national terms, her influence on the health of the nation is enormous, and in economic terms incalculable. An investment in training is undoubtedly of personal and social benefit.

But home-making is not the sole responsibility of the wife; husbands increasingly take a share and it is equally important that a boy's education should include some preparation for the responsibilities of family life and parenthood. The attitude of parents in tomorrow's world may well depend upon how well their needs are met in school today.

In the Schools Council Enquiry 1, *Young School Leaver*, housecraft is listed (when it includes broadly based aspects of home-making) as a subject rated highly for its usefulness by girls. The failure to attract girls to the study of science and technology is a matter of national concern. And yet, scientific knowledge in the home is of immense importance to housewives and mothers. Recent experience has shown, however, that girls see much of relevance in the work of applied science when it is related to the home situation. Mrs. Barbara Castle, when asked if a training in engineering for girls differed widely from that required for the 'kitchen sink', replied that it was not so very

different, because both required training for well thought-out efficient work.

Primary School and Middle Years

The origin of a good modern course in home economics lies in the primary school with personal cleanliness, early training in sensible attitudes to food, to health and to other people. The natural interest in home affairs and the skills of cooking, especially making cakes for tea, washing dolls' clothes, using a variety of materials, household equipment and tools leads naturally to a link with science in carrying out simple investigations, and will at the same time, reinforce speech, literacy and numeracy.

The middle years of schooling are of fundamental importance in the establishment of certain practical skills and attitudes towards family living. At this stage girls are active and enthusiastic about making things to eat and to wear. Splendid opportunities are offered during practical work to develop speech and powers of reasoning, to learn to question, read with comprehension, to write notes for reference, and to develop a sense of time. The craft is both creative and satisfying and the opportunities of working in groups with shared equipment and consideration for other people are educationally valuable. Cookery lessons will increase in importance during this early training period. The pupils should learn to cook vegetables well, to make a sauce, to cook the less expensive joints of meat, to use fish and to make simple and quickly prepared supper dishes and puddings, to present attractive salads and to know how to select dishes which complement one another in a meal. Such an introduction would provide the platform on which the far-ranging course in the upper school could be built.

Given a soundly based introductory course, the work of the 13–15/16 and 13–18 year old group of pupils can be related to the changing conditions in homes, in patterns of work and leisure. Work can be related to labour saving equipment, functional design of furniture and to the new textiles and their maintenance. At 13 years of age both those girls working towards an external examination, and those who are not, will require a broadly based syllabus of home technology covering the main aspects of home-making as a preparation for leaving school, beginning work and acquiring a first home. The old-fashioned cookery course based on demonstrated dishes followed by practical work of the same order is giving way to work, sometimes practical, sometimes recorded discussion, often with help from outside speakers or visits out of school to seek information on a variety of topics. Much of this work can and should be done in a practical situation. A girl who can serve a well cooked meal, on time, has had plenty of practical experience and has been extended both intellectually and physically since she has learned to work with dexterity, to think ahead and to organise her work in order to achieve what she set out to do. An effective, modern course accommodates the varying needs and abilities of the pupils, secures the balance between practical work and discussion and fosters liaison with the work done in science, art, English and the humanities.

With girls who remain at school for one or two years beyond the age of sixteen, there are opportunities to experiment with courses which

utilise their greater maturity. There are indications that two types of course are emerging in the schools.

1. A practical course based on interest and recreation where boys and girls, working together, cook the dishes enjoyed by young people today. The work is essentially practical with emphasis on good order and learning to work quickly and efficiently.
2. A course for family living or home-making planned in minority time for boys and girls attending together. The number of pupils who can follow this type of course exceeds those for course 1 and enables every sixth former to take part. This course is often based on talks, discussion and tutorials in which the broad aspects of family life are discussed.

Although the home economist is probably the most suitably trained person to plan a course of this kind it is always useful to work closely with other members of staff and to invite speakers to visit the school. Individual pupils should be encouraged to read widely on selected topics and to present papers as a basis for debate.

Equipment and Accommodation

The design of new rooms and the adaptation of existing ones has done a great deal to help the home teacher to introduce work in conditions as near home-like as possible. The room which had services on two or three walls and tables in two lines for formal teaching of cookery now has small kitchen bays, sometimes formed by the arrangement of work tables, which can be changed easily. Frequently an alcove is provided where the girls can refer to books, write or entertain their friends. In recent years the design team in the Department of Education and Science, some LEAs and private firms of architects have taken the lead in exploring exciting possibilities of school design. A suite of rooms opening on to a common area with easy access from one space to another and easy movement from discussion to investigation or practical work opens up new teaching opportunities.

In providing new rooms it is important for each kitchen unit to be planned with the right working heights and relationships between the sink, working surface and cooker so that the girls can appreciate the efficient and economical use of space and equipment. In such a room a valuable space will always be the quiet carpeted area, imaginatively furnished, where girls can entertain, refer to books, carry out topic investigations while a prepared meal is cooking slowly, make a dress, or listen to a radio or TV programme. This 'living' space will need to be large enough to allow a few of these activities to be going on at the same time and furnished in such a way that it is adaptable for different uses.

Often two girls will spend a week in the flat planning their work to include maintenance, cooking on a budget, entertaining, and sometimes also attending a few selected or essential lessons in class. In this way they learn, for example, to cook a casserole meal which will be ready at lunch time when they return or to cook a meal in half-an-hour as many working wives will have to do. Thus the home economics flat may be used to simulate the conditions of a young married woman's home.

It is desirable for the flat to be *well planned* with the minimum of

essential kitchen equipment and appropriate storage facilities. A large dining/study/living area and bathroom or shower will be particularly valuable. For many girls a hot bath in the flat in pleasant surroundings may be a new experience which they find both relaxing and comforting. A small hall with its own front door has many advantages. Girls can receive visitors and entertain relatives. The living area in the flat also provides a suitable place for tutorials or discussion with small groups from other courses.

Provision in a Middle School

Some middle schools will be accommodated in secondary school premises and so are likely to have home economics bases, but it is essential that these are adapted where necessary; others will be purpose-designed and one may hope that these will include some of the facilities already described, such as bays for cooking, sewing, laundry-work, living and dining. But many middle schools will derive from existing primary schools. The planning of converted home economics rooms in these circumstances will be of greater importance. One space could be equipped with three or four independent cooking units with complete facilities for six or eight girls and boys. Two of the units could provide for various kinds of experimental work and the rest for the provision of meals. A food store could be planned as a shop where foodstuffs are priced and sold. Two tables with fitted drawers each with two sewing machines might provide a place for making clothes and a bay with sink, washer and spin drier, an area for maintenance and experimental work with fabrics. Storage cupboards could provide the shop for fabrics and haberdashery. An important section of the room should be the quiet, carpeted area for study, dining and entertaining. It might be provided with books, low chairs and tables, a wall bench, dining table and chairs, outlet sockets for radio and television. Thus, a few girls and boys may be cooking their lunch in a kitchen bay, two or three may be washing and ironing their shirts in the laundry bay or carrying out investigations into the behaviour of modern textiles when these are wet or subjected to heat; some pupils may be carrying out experiments on foods; others might be engaged in a topic investigation using the study/living area and the school library or going out of school in search of information.

The time allowed for teaching home economics varies and schools devise their own schemes. In the middle school years the time may be from just over an hour to a half day session. In general, less time is needed by the more academically gifted girl but *all* girls require a basic practical course of two years in order to learn the practical skill fundamental to the senior course. Some schools have experimented with courses involving planned integration of a number of subjects in substantial blocks of time over the week, with some success and satisfaction. It may well prove a useful approach to senior courses when the school leaving age is raised.

Home economics has a special contribution to make in the education of immigrants and time might be allowed for this work with pupils at different stages of language learning. By helping them to use kitchen equipment, to cook food and substitute foods for those they miss from their home country, to rectify problems of skin and hair brought about by the change of climate, cultural shock may be lessened. To

broaden their vocabulary by the use of 'home' words and technical words connected with the crafts of the home, to provide some leisure hobbies (embroidery, dressmaking and cookery), reading for comprehension and a developing sense of time; these are some of the means by which home economics can help in their adjustment to a new country. Opportunities might also be found for the older immigrant pupils to teach our girls about their national dishes and crafts.

The Teacher and the Future

Teaching method is becoming more individual, more child based. Practical work is becoming more investigational—a process of learning through doing which involves the practice of essential skills. The home economics teacher often finds herself in the position of counsellor to the girls by virtue of the nature of her subject, its realism, and the opportunities it offers for quiet informal conversation. For the teacher with a sympathetic and balanced personality, the scope for education in direct human terms is both a satisfaction and a challenge. The teacher too faces some problems. Keeping oneself up-to-date is one difficulty and she needs also the chance for refreshment and reflection which is met, for many teachers, by professional contacts with colleagues at teachers' centres, professional meetings or in-service courses.

Many girls will need clear, simple instructions on food values and buying foods for meals, far removed from examination work in nutrition and dietetics, which so far have seemed to have influenced housewives lamentably little. The cooking skills involved need be simple so that good results are easily achieved. Advanced cooking skills of cakes and pastry are inessential, but skill in cooking meat, fish and vegetables is all important. The fundamentals of nutrition should be taught and valuable practice can be gained from preparing meals for special needs.

There is a need for teachers of dress and design. Technical knowledge without a training in design has led to much dull and uninspired work in the schools. The teacher must be prepared to educate the girls not only through imparting technical skills, but through the social and economic aspects of dress, scientific knowledge of textiles and their behaviour and the creative aspects of embroidery and dress accessories. An instructress is no longer enough; the needlework teacher must be a valued member of staff taking her place with others in the school's organisation and contributing to the wider aspects of education.

The schools especially need teachers who are sensitive to the needs, growth and development of young adults, their background of home-life, their fears and problems, their out of school interests and relationships and their effect upon their response to school work. The success of the courses planned for the young school leaver and for the new sixth formers in home economics will depend upon the teachers' ability to meet and understand these needs. Many students have a genuine and sustained enthusiasm for helping the less fortunate. A first step with many of these is to help them to look after themselves in a home situation and here the home economist has a special contribution to make.

Education and training for management responsibility is of great national importance. What are the difficulties which an LEA has to surmount in order to contribute to effective provision in this field?

LEAs and Management Education

J. A. SPRINGETT

The Government's policy, reflected in rate support grant orders, is likely to limit the increase in local authority expenditure to 5 per cent next year. This follows a year when the increase was limited to three per cent.

It is within this general context of restriction on local authority expenditure, and the special context of restriction on further education expenditure, that one has to consider the question of management education in the local authority service today.

There is ample evidence (e.g. from the National Economic Development Council and the business press) of the need for the expansion of management education and there must now be very few local education authorities in which there is not a hard core of officers and members who are aware of these deep needs. This form of further education poses special difficulties for the LEA in conception, in methods and in finance. To put it on its lowest terms, the LEAs cannot afford to let their part in this work fail through over rigidity in their procedures, or through any other defect in their own management approach. Business opinion, management opinion, and, in the end, public opinion will see that this provision is made. The local authorities generally need have no cause for reticence or timidity. In the further education field generally they have much to their credit in the last 20 years: they have seen further education institutions grow from night schools which were attended by children who were often educationally and economically deprived, to flourishing and accepted educational centres.

Management education is a field in which it is especially difficult for the local education authority independently to assess the need and the demand. The need is not always apparent even to industry itself: indeed, it is said that the demand is less than the need and the need is less than the capacity. Somewhere amid these confusing inequalities, the LEA must establish and maintain its rightful place. Only a strong management department in a college itself can assess the demand: hence the need for an initial act of faith on the part of the LEA.

Planning to Meet Demand

It is the management department's task to assess demand at all levels—senior management, middle management, supervisory, and technicians and practicioners—and also, of course, to assess the demand for the different types and varieties of courses, general development courses,

functional short courses, part-time courses, and supervisory training. Faced with the kind of information that this expert assessment can provide, the local authority must itself take steps to see that the supply of management education for which it is responsible is on a rational and efficient basis. This need for rationalisation is not confined to the area of any particular local education authority, nor to any particular level of work; nor, of course, for that matter, is it something peculiar to management education. In the field of management education, however, it is particularly important—we cannot have two colleges both canvassing the same firms for work of the same type. If a local authority area, or part of that area, is not therefore itself reasonably self-contained, there must be some proper bilateral or multilateral or area arrangement between authorities for discussion on these matters.

In Essex, as part of a general consideration of rationalisation problems in further education, arising from the Pilkington report, it was intended at one time to set up fairly formal machinery, a kind of academic board for management education, which was to be representative of the colleges concerned with this work. The colleges themselves have not found this formal machinery necessary, although the work which such a board might well have done has been carried out on an informal basis by the heads of departments concerned, in consultation with the authority's officers. A sensible and workable plan, based partly on functional considerations, partly on geographical considerations, governs their work. Such a plan recognises the places in which effort must be concentrated, those in which there is a concentration of the necessary expertise, and those where teaching units and student groups of a proper and efficient size can be gathered together. It has, of course, to be recognised that rationalisation means a limitation on the autonomy of individual colleges. To achieve this it has not been necessary in Essex to use any processes other than discussion and rational argument.

The second and important obligation which an appreciation of the need imposes on a local authority is to provide the proper environment for this work. The environment must be proper physically, proper financially, and above all, must be proper from a staffing point of view. There is the need for suitable accommodation, especially for courses for senior managers, with proper furnishings and facilities and specialist rooms, e.g. for work study, and where necessary for proper residential accommodation of a suitable standard.

This is not easy in the face of present difficulties, but opportunities can be taken as they arise. Essex has taken over a large country house of some distinction as an immediate centre for management studies for the Mid-Essex College a few miles away. This particular site appears to offer considerable scope for development as a first class residential centre for meeting the needs of management courses at all levels, as well as in-service training courses for teachers in this and other fields.

Finance

The essential thing to be understood and accepted is that what really has financial significance for the authority is the college's net budget, not its gross expenditure. In Essex this position has been arrived at

by a common-sense approach from all concerned over a comparatively brief period of time. Of course, the net budget principle pre-supposes an income. In educational administration income may be positively embarrassing: like expenditure it has to obey the rules. The income on the self-supporting management studies' account at the Mid-Essex College has increased from about £3,000 three years ago to an estimated £35,000 or thereabouts in the current year. At a recent meeting, at which all the colleges were represented, the attempt was made to put college income from self-supporting courses on a uniform agreed basis.

The broad decision was that courses should be classified in three ways. First, non-self-supporting courses, which include short courses and conferences and which are held on college premises, are open to any suitably qualified or experienced person and provide services of the normal type: for such courses, the normal scale of fees apply. Secondly, semi-self-supporting courses which are courses similar to those indicated above, i.e. open to any suitably qualified or experienced persons, but where the services which are made available are to a higher standard than those which are normally offered, or where special expenses are likely to be incurred in providing special items of equipment, materials, accommodation or refreshment. For this kind of course, it is suggested the fee should cover the normal college fee plus the special expenditure involved. Examples of such courses are those leading to the Diploma in Management Studies and the national examinations board in supervisory studies certificate.

In the third category are the fully self-supporting courses which include major and short courses provided specifically for the nominees of a sponsoring organisation, either on an 'in plant' or college basis, and for these courses a fully agreed economic cost of provison should be recovered. The economic cost for this last category should include not only the directly outgoing expenses, such as the hire of accommodation, residential charges, lecturers' fees, but also the indirect expenses, including administration and establishment expenses at pre-determined rates. It is this last aspect which can be such an important factor and which has to be carefully discussed and agreed with the Treasurer concerned. The rates that we propose to adopt are from about 80s. down to about 50s. per contact teaching hour, plus a standard addition of 65 per cent (or 10 per cent in the case of 'in plant' courses) for overheads, administration, etc. These figures are, of course, exclusive of direct expenses such as hire of accommodation, residential charges, visiting lecturers' fees, special entertainment, etc.

A Limited Company

It is not suggested that this type of net budgeting procedure, with specially agreed accounting methods for self-supporting courses, is the entire answer to the college's needs. It may be that a second step is required and that this must be much more radical. An example, is to be seen in the rather specialist field of export marketing courses put on by the Thurrock College. These involve the students' spending a period of some six months abroad at sales centres in various countries in Europe engaged on practical export marketing work. There they are engaged on exploring export opportunities for real products

offered for the export market by particular firms who have paid for this service. This exercise, to be of value, must be real. If it is real, profits may be made. To meet these circumstances, the authority have agreed to enter into a contract with a limited company. Under this contract, this company, whose directors include members of the teaching staff of the college, provide a service to the authority, a service under which the company gives to the students the practical experience outside the United Kingdom in export marketing techniques. The authority, in its turn, gives to the company the services of full-time teaching staff at the college, including, of course, those who may be directors of the company itself. So far as the authority is concerned, the company is free to make such profits as it can, and the disposal of those profits is entirely at the discretion of the company.

It is immediately obvious that an arrangement like this could be open to very serious abuse if there were not proper safeguards. These safeguards are contained in the contract between the county council and the company. The contract provides first, that the company shall, when required by the council, provide training facilities at their sales centres outside the United Kingdom for students attending the practical export marketing course, and that the supervision of this training shall be under the control of teachers of the college or other persons approved by the council. Second, that the company shall pay such students their travelling expenses when proceeding to and from sales centres or between sales centres in Europe and such additional subsistence allowances as they may require, in addition to their grants from local authorities. Thirdly, that they shall make payments to all the teachers engaged in this work for travelling and subsistence during the periods they are outside the United Kingdom. And fourthly, that they shall exercise a number of clearly defined responsibilities relating to the insurance of the students and teachers, and shall indemnify the county council in respect of legal liabilities relating to students and teachers.

For their part, the governors and the authority permit the company to make use of the services of the head of the export marketing department and other professional staff of the college, both within and outside the United Kingdom, to act as tutors and supervisors for the students, but there is an important provision that the aggregate of the periods for which the services of such staff may be utilised for this purpose should not in any year exceed that which the council shall determine to be reasonable in relation to the number of students at the college who are benefiting from the services of the company. The company is, in fact, required to submit each year to the principal, details of the extent of the services of the college's professional staff that it wishes to use during the following academic year.

The company is required to consult the principal and keep him fully informed of their activities relating to their work with the students and to pay regard to the principal's overall responsibility for the adequacy and efficiency of the education and training of the students at the college.

These are the broad principles of the co-operation which exists between the council and the company which receives its income from firms who pay quite substantial fees either for export marketing advice on specific products, or, more particularly, for the use of the company's sales centres.

Consultancy and Courses

It is interesting to speculate about whether arrangements of this kind could be adopted with relation to management courses generally. It might be suggested that just as lecturers at Thurrock have established a company to service export marketing work, so a group of entrepreneurs and management lecturers at a college might well consider establishing a limited liability company, whose business would be management consultancy and the running of courses of the third type, that is non-open courses on an 'in plant' or 'in college' basis for industry. A considerable amount of their work would be devoted to providing management courses of normal non-self-supporting types, but the staff would be free to reduce the time they give to such work, by a previously agreed amount, in order to serve the limited liability company. In addition, of course, the staff would be free to give such additional time to the work of the company as they thought fit. The company would receive fees from industry and would provide training and consultancy of the type at present conducted on the self-supporting budgetary principle. Clearly, such an arrangement would need proper safeguards. The basis of payment between the company and the LEA would have to be carefully pre-determined. Amongst other advantages which this tentative suggestion offers is that it could afford the means for offering the right financial inducements to well-qualified members of staff without directly disturbing the staffing establishment structure within the college and its relationship to other departments.

Staffing

Staffing is the third and the most important factor governing the development of management courses in a college. Whatever the problems of staffing, it is for the authority and the college to see that there are opportunities for the staff to keep up to date. There must be a generous attitude towards release for in-service training and to obtain further qualifications which have a relevance to the teacher's function, and for secondment to industry where this can be arranged. A staff concerned with the sort of consultancy company which I have just described, will inevitably find that their feet are firmly planted in industry's own problems. There are two further needs. The first is to recognise fully that management teachers, more especially those involved in short *ad hoc* courses, need a comparatively high proportion of time spent outside the contact teaching position and an adequate supporting auxiliary staff. The net budgetary principle which already obtains in some colleges and the freedom to spend money on self supporting courses can be of assistance with the latter problem. The Mid-Essex College for example, makes very substantial use of agency services paid for from income in the self supporting account, to provide the equivalent of non-teaching staff in the college.

The development of management studies for local authorities is a test and a challenge. I suspect that the proposed new local government structure, in which there will be a limited number of larger authorities, would help to secure recognition of management education's special problems and needs and the administrative flexibility that is necessary if they are to be met.

In Holland new educational legislation recently came into force and schools are changing from their traditional pattern.

Schools in Transition —the Dutch Approach

F. H. MOLYNEUX and G. LINKER

Perhaps the most illuminating aspect of educational provision in the Netherlands to the English observer is the fundamentally different relationships existing between the individual citizen, the schools and government. This in turn produces a totally different concept of public and private education. The two sections of educational provision in the Netherlands are the *Openbaar Onderwijs*, that is education provided directly by central government or municipalities, and the *Bijzonder Onderwijs* covering all education provided directly by private institutions or organisations either denominational or secular. The relationships between these parts is based on the principle that:

> parents should enjoy the possibility of giving their children that type of education which is in harmony with their way of life, their trend of thought, or their preference for certain methods of teaching*

Consequently the rôle of government, central and local, is to provide the means to this end. Thus if parents want secular education for their children then public schools must be provided, if denominational then in principle (and to a large degree in practice) the means for the establishment and maintenance of private schools must ultimately be provided. Within both the public and private sectors the desire for schooling according to a particular educational method can also be met.

In brief the attainment of such ends is accomplished by comprehensive subsidy of the so called 'private' sector from the public purse. The arrangements are such that types of school, salary structures, levels of teacher qualification, basic curriculum and leaving certificates are standard across the Netherlands. The financial underwriting of the private schools from public funds brings conditions of grant which ensure national patterns of curriculum, examinations and staffing. There is thus a valuable element of unity and comparability without the restrictive control of the individual institution by either central or local government. Indeed it cannot be over-emphasised in comparing the two systems that the local education authority in the English sense does not exist. Each municipality has an alderman with acknowledged responsibilities toward the public and private sectors of education and a *chef afdeling onderwijs* but the latter, as a permanent

* *The Dutch School System*, Netherlands Ministry of Education, Arts and Science (1960).

official, has more of a clerical function, than that associated with the English director of education. An 'independent fee paying' system of schooling does not have any significance in the manner well established in England.

However, in recent years the peculiarly Dutch version of the private element in the various stages of schooling has been predominant in the proportion of total provision.

Pre-elementary	— 80 per cent	Secondary	— 60 per cent
Elementary	— 70 per cent	Vocational	— 90 per cent

This reflects the existence in Dutch society of the so called 'three pillars'. That is, some five million members of Protestant and Roman Catholic churches respectively and over two million who regard themselves as having no religious affiliations. Consequently the great majority of the schools are effectively related to one or other of the main Christian churches or are 'neutral', provided and loosely administered by the municipality. The teachers' organisations and research centres mirror the same divisions though the non-denominational union would seem the larger and more vocal.

Types of School

The year 1969 saw the Dutch school system in a process of transition with the bringing into effect of legislation passed in 1963, the so-called 'Mammoth Law' (the post-primary Education Act). Dutch school provision reflects quite clearly its origins in the traditional European pattern of mass elementary schooling from about six to twelve years with a highly selective classical secondary school (the gymnasium) feeding the universities and producing a ruling elite.

In 1863 the latter was supplemented by the development of modern grammar schools (*Hogereburgerschool*, or HBS). By the end of the 19th century the structure was further elaborated with the growth of extended elementary schools and the establishment of a comprehensive array of vocational schools under the auspices of the Technical or Vocational Education Act of 1919. By the advent of the Mammoth Law the elementary technical schools absorbed some 40 per cent of all boys successfully completing the basic school.

In round figures the pre-university schools, gymnasia and HBS (often combined latterly as lyceum) took about 20 per cent of primary school leavers with some 39 per cent remaining under the control of the former Primary Education Act in the elementary schools. Despite the label 'advanced primary' such schools with four year courses including three modern languages and a highly respected leaving certificate were hardly to be equated with English secondary modern schools, though official Dutch literature often describes them thus.

One should add that, though based on a statutory leaving age of 15 (thus giving a year less of compulsory schooling than in England) this provision is backed by a comprehensive range of further educational facilities of a vocational nature and a well developed apprenticeship system. Consequently some 60 per cent of Holland's 16 year age group remain in full-time education compared with 40 per cent in England and Wales.

In organisational terms the Mammoth Law has united all post primary

school provision to the extent of replacing the four pieces of legislation which applied in this sector by the single act. The basis of the divisions between types of post primary school is clarified in that three functions are recognised:

1. Pre-university or preparatory scientific.
2. Continued general education.
3. Vocational education.

The last two categories are subdivided into lower, middle and higher provision. Perhaps the most striking change in this respect is that the modern grammar school (HBS) ceases to exist in its old form. That part of it serving a preparatory university function continues as the new *atheneum* (often combined with *gymnasium* streams in the multilateral *lyceum*). The rest of its functions are now to be fulfilled by the newly created higher general schools, or streams so designated in larger institutions. Consequently, though under the new law provision is made for:

> 'a school for post-primary education within the meaning of the Act and one or more others of types regulated by the Act or not, to be combined into a comprehensive school'.*

it is evident that the Dutch approach to secondary reorganisation is basically in terms of separate types of school with the consequent necessity to divide the school population at twelve plus on a basis of their desire and ability to pursue courses of instruction with contrasting functions and, in terms of certification, with distinctly different goals in view.

In view of the superficial similarity between such an arrangement and the tripartite structure which characterised English secondary evolution after 1944 and which present government policy aims to terminate it is necessary to stress certain other aspects of contemporary Dutch secondary education.

Firstly, though the Dutch parent has not the ultimate right to insist that his child enter and remain in a particular secondary school and the admission procedures are clearly regulated by law there is equally no question of the automatic allocation process to a particular school or type of school which characterises the eleven plus situation in England. In marked contrast the arrangements of local government do *not* circumscribe parental choice and the eventual admission of a pupil to a particular secondary school.

Secondly, the Mammoth Law statutorily enforces the bridge year or transitional class at the onset of secondary education with an attempt (albeit imperfect) to provide a common core curriculum for all first year pupils in all types of school. (Variations in the gymnasia and the lower technical schools in particular prevent the full realisation of a common diagnostic experience.)

It should be added that there is a significant body of educational opinion in Holland which sees the bridge year as one of the most vital elements in the Mammoth Law. At least 10 school communities are planning to extend this period of orientation and diagnosis to three

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* *Summary of Post-primary Education Act in the Netherlands* (Mammoth Law) 1968.

years, working on a basis of non-streamed classes covering the pre-university, continued general and vocational sectors. In this respect there is an obvious and interesting similarity to the French premier cycle as defined after February 1966. Having four statutory 'study lessons' per week represents a distinctive Dutch approach to the functions of the bridge year.

The insistence in Holland on nationally administered leaving certificates leading to a wide variety of further education courses and the apprenticeship system has prevented the growth of any sizeable element in post primary education which is so 'general' in aim as to be without the possibility of any specific leaving qualification. In the pre-CSE period this was precisely the situation of the great majority of pupils in English modern schools and hence one has another fundamental contrast between the two approaches. Similarly, with a considerable proportion (40 per cent of boys) entering the Dutch elementary technical schools at 13, destined after a further year for commitment to trade orientated courses e.g. auto-mechanic, there is little direct comparison with the smaller, less specialised secondary technical school sector in England.

Background to the Mammoth Law

The new legislation appears to have been in part a consequence of and response to the criticism of the above structure from within. One notes the presence of deep divisions within the secondary school world which have restricted the opportunities for transfer of pupils and aggravated the problem following from wrong choice of school type. Such divisions are intimately related to the differing background and training of the various categories of teachers and are complicated further by the 'three pillar' arrangement already described.

Conversely, the greater reponsibility placed upon the individual school in Holland seems to have produced a deeper involvement in school reform among many more class-room teachers than in England. The less developed nature of teacher training and educational studies within the universities has thrown a greater onus on the teachers' organisations and the individual schools which, it is argued, are freer to act effectively in the process of educational renewal than most maintained schools in England. One is struck by the rôle of groups of teachers, often associated with a particular school in fostering and disseminating particular aspects of change. The publicising of their approach to the bridge year study lessons by schools such as the Pius XII College at Deurne is a specific example.

One also notes the critical vigour of certain elements within the Dutch Inspectorate and is led to speculate as to their importance in the movement leading to the Mammoth Law. The following extract from the official address to an English delegation recently visiting the Hague might be noted:

> It is important, for reorganising and setting up the education system in a country, to realise the disadvantages of the present system in the Netherlands. About 59 per cent of the pupils following primary education reaches the end without any delay. 30 per cent of pupils come through primary education with delay. Of the 11 per cent not reaching the end, 2 per cent drops out because of illness, death or emigration. Of the remaining 9 per cent,

5 per cent is transferred to special primary education during the first years.
Another 4 per cent remains which gets stuck during the 4th, 5th or 6th year. This applies to primary education.

Numbers of persons entering into society in 1960 without following any further education coming from various branches of education with and without a certificate *relating to that branch of education* were as follows:

	With Certificate	*Without Certificate*
Scientific education (universities)	63	37
Teacher training	81	19
Higher vocational training	63	37
Advanced vocational training	70	30
Elementary vocational training	56	44
Grammar and other secondary education	42	58
Advanced primary	35	65

The main reasons for this delay are: the wrong choice of school and insufficient opportunities for transfer; the rigid and traditional Dutch education system which offers too few opportunities for differentiation, and adaptation to the talents of each individual pupil; insufficient development of didactics and methodology in education; and inefficient use of modern visual aids.

The questioning of efficiency within Dutch education and particularly in secondary provision underlies the advent of the Mammoth Law. The growth of the Dutch educational system since the war has been one of the most rapid in Europe. There is little doubt that the Dutch see their future in terms of the fullest use of their human resources. With limited natural wealth and a high birth rate they have every incentive to regard educational expenditure as high priority national investment. In relation to national income this investment is one of the highest in the world—7.5 per cent in 1965 with an expectation of reaching 10 per cent by 1975. The Dutch national plan for 1970 envisages an increase in individual productivity of about 40 per cent in relation to the 1965 situation, while manpower is expected to rise by less than 5 per cent. This can only be achieved by improved technology and a highly skilled labour force. The implications for Dutch education are well summarised in a recent OECD report:

> A high and changing technology requires a wide range of occupations—including those where the skill is predominantly manual—a greater ability from the worker to adjust to growing complexity and mobility; such adjustment can be facilitated both by increasing the fund of basic knowledge imparted in compulsory education and by modifying the aims and teaching practice of schools.

This leads to a pivotal problem—should the Government promote new forms of education or accept the continued expansion of the old? In the event the Mammoth Law would seem to embrace both approaches in an attempt to increase the participation of all social and economic groups in secondary, further and higher education. The Report also points out that:

> the sharp increase in grammar school enrolment has been accompanied by small changes in the social class distribution of first entrants as defined by fathers' occupations. Participation by the lower classes is still low.

The Mammoth Law is also an attempt to increase the efficiency of the existing processes (as at present only 50 per cent of the 12 year olds in secondary education actually receive a certificate of completion in some course of study).

Nevertheless, the Law is described as 'permissive rather than prescriptive' and the OECD observers made two forceful recommendations:

> Secondary school development under the Mammoth Law be translated into specific measures to increase flexibility so as to develop talents to the maximum and among other things to prepare broader access to higher levels of education.
> Specific educational measures be taken to eradicate any remaining hierarchical divisions in the structure of the educational system which are no longer useful for the needs of education in modern society.

The OECD examiners, while acknowledging the pivotal nature of parental choice and the pluralistic structure of Dutch school provision, questioned its suitability in relation to the total needs of educational planning. One should note that an important clause in the Mammoth Law necessitated the drawing up of an annual plan by the Minister of Education showing the (public and private) post-primary schools which would be eligible for State support in a three calendar year period. A basic criterion for inclusion in the plan will be the number of pupils anticipated to attend in the last year and the flow of pupils as determined from statistical data obtained from the Central Bureau of Statistics and other sources.

English and Dutch Schools—Contrasts

Despite the substantial measure of uniformity with regard to curriculum patterns and final examinations among schools of the same type the English visitor to Holland quickly appreciates the differences between individual institutions. In addition he is aware of certain general contrasts between selective schools in the two countries.

Firstly, the ability of the rector and staff to order their own affairs manifests itself in a variety of ways. In general the school day is based on the 'long morning' but there appears to be a greater element of discretion exercised by the rector in relation to the timing of lessons. It must however be remembered that the timetable of the secondary teacher and those of the pupils do not coincide to the same extent as in this country (see below). In addition the absence of a school meals service gives further room for manoeuvre with regard to the working day.

Also, though no tuition fees are chargeable most schools levy a small annual fee to establish a school fund. About 25 guilders (approximately £3) is typical and in a school of say 700 pupils the resulting sum gives some scope for individuality via production of public relations material, admirable agendas (working diaries) for each pupil, etc. Text books are not provided in Holland and some schools organise a hiring scheme adding another dimension to the institution as a self-administering enterprise. Uniformity, in a more obvious sense is also absent; the idea of a school uniform is incomprehensible to most Dutch parents; nor does one find house structures and delegated authority in the form of the prefect system. Similarly the extensive playing fields

associated with many English secondary schools are also less common in Holland and the overall impression of the lyceum in contrast with a grammar school is of a less formal (always co-educational) institution with more independence as a working unit but lacking many of the traditional extra-curricular activities of the latter.

The root of some of these contrasts is to be found in the different teacher practices and attitudes. The most fundamental of these stems from the Dutch graduate's contrasting concept of his rôle. He is much closer in outlook to the French professeur than the English grammar school master. He begins to teach at a later age after a longer university experience but in most instances with less professional training. His primary commitment is to an appointment of 26 teaching hours per week and he does not regard himself as acting *in loco parentis* from 8.45 a.m. to 4.00 p.m. five days per week for forty weeks in the year. There is some scope for the remuneration of extra duties but no system of graded posts.

From a teaching standpoint both he and his English counterpart would seem to have equal opportunity to be 'king in the class-room' though both subject to the ultimate demands of external examination systems. The Dutch teacher has not the problem of contending with the differing syllabi of a variety of examination boards nor will he normally be expected to devote himself to regular internal examinations. The typical Dutch practice is that of continuous assessment via report cards often covering a period of twelve weeks. Classes are not streamed in the English sense but other than in schools with a distinctive pedagogical basis, e.g. Dalton and Montessori secondary schools in several areas, teaching method would seem to work on the assumption of homogeneity. In consequence another major contrast with the English situation is that a high proportion of Dutch children repeat a year's work both in primary and secondary schools. Similarly the failure rates—in terms of failure to secure certification in the type of course followed—are high (see earlier). Here it must be remembered that Holland subscribes firmly to a broader curriculum pattern than is the case with the sixth form and that leaving examinations are of the school certificate type rather than the single subject GCE or CSE procedure.

The former elementary schools and the technical institutions remind the English visitor of the major differences in approach between the two countries in that no counterpart provision comes readily to mind. The change at 12 coupled with the longer school life and the stringent demands of certification effectively dispel any tendency to classify them as Dutch 'secondary moderns'. The absence of uniforms, prefects, and school meals intensifies the contrasts and though the elementary technical schools have a slightly more formal air one is perhaps justified in the generalisation that Dutch secondary institutions are somewhat more student as opposed to pupil orientated than their English counterparts.

This would seem to be intimately associated with the greater autonomy which characterises Dutch schools and their staff. The rector is far less circumscribed by local authority than the head of a typical maintained school in this country and he consequently appears to have a significantly different relationship with the parent. This in turn stems

from the greater choice and consequent necessity to make decisions about the schooling of one's offspring that faces the Dutch head of family. The headmaster of the elementary school plays a pivotal advisory rôle (intensified by the three pillar situation) usually suggesting a particular secondary school and rector with whom the parent might profitably discuss the future education of his child. Such a head/teacher/parent relationship continues through the relative intricacies of the post-primary world strengthened by the minor but inescapable business arrangements embodied in the transaction of the school fund, the purchase or hire of books, the availability or otherwise of 'extra courses', etc.

Two fundamental contrasts are therefore worthy of note in conclusion: that the autonomy of the individual school is considerable, far beyond that of the typical maintained institution in this country (the shadow of 'the Office' is not evident); and that Dutch parents are wholeheartedly involved in maintained, i.e. publicly financed schools and the interest and participation of an influential and articulate section of the community are not deflected into a separate fee-paying sector.

It would appear that Holland is faced with the difficulty of reconciling the retention of her uniquely high freedom of choice in maintained schooling with the search for greater efficiency and democratisation. In England it can be argued that the freedom of the parent to choose has never been attained in maintained schools despite the existence of section 76 in the 1944 Act.

Finally, unlike the OECD observers, one might plead for a much closer examination of the assumptions, training and expectations of the teachers in both societies. One can do worse than repeat the final sentence of the preface to the English summary of the Mammoth Act: 'The new Act provides the framework for an important reorganisation of the education system. It will be up to the teachers, however, to translate the new system into practice.'

No. 1: Coals from Newcastle
Compiled by L. Turnbull and J. C. Tyson

No. 2: Travel in the Turnpike Age
Compiled by D. R. Brenchley and C. Shrimpton

No. 3: Railways in the Making
Compiled by R. M. Gard and J. R. Hartley

General editor: J. C. Tyson, University of Newcastle

Distributors: Harold Hill & Son Ltd., Newcastle Upon Tyne. 13s. 6d.

Documentary research has come into its own in school teaching. Stimulated by the popularity of individual projects in the Certificate of Secondary Education examinations and in the Colleges of Education, encouraged by the phenomenal success of Jonathan Cape's *Jackdaws*, blessed by the Department's recent pamphlet on *Archives and Education*, the movement has gathered increasing momentum. In the last two years no fewer than eight series of documentary material for schools have been launched by various publishers. It is all part of the general pedagogic philosophy of Finding Out for Yourself which underlies equally the New Mathematics and Nuffield Science.

The present series is a worthy contribution to this movement. It consists of a set—so far three have been published, but more are to follow—of stout and brightly-coloured folders, each containing an introductory article setting the documents in their historical context, a glossary of technical terms, a handbook giving the background of the documents, and the documents themselves. To enumerate these in detail would be tedious, since each folder contains between 23 and 29 extracts. In general they may be described as a combination of contemporary illustrations; maps of coal-fields, roads and railway systems; extracts from account-books and wage-books; descriptions by journalists and pamphleteers of the new developments; newspaper cuttings, facsimile letters, Parliamentary petitions and so on. Some are of particular interest: a contemporary description of the Felling pit disaster of 1812, in which three-quarters of the underground workers were killed, and a subsequent letter from Sir Humphry Davy reporting progress on the designing of an effective safety-lamp; a letter from Robert Stephenson accepting a commission to plan the Stockton-Darlington railway, and one of his sketches for the design of a locomotive; the accounts kept by a gentleman journeying by stage-coach from London to Haltwhistle in Northumberland in 1827. The general impression is that the documents are well-chosen and likely to provide the student with a vivid sense of actuality.

The question which arises at this point, however, is: which student? The series would appear to be planned for secondary schools, with CSE candidates and even younger pupils in mind. But a good deal of the material is highly technical and beyond the understanding of less able secondary pupils. They would need a lot of help from the teacher if they were really to make sense of some of these extracts.

The series is open to criticism also on the grounds of the severe restrictions, both in time and space, which the editor has imposed. The folder on the development of the railway, for instance, stops in 1825, before the opening of the Stockton-Darlington railway. This is to limit the story to the prologue; after all, there were still only 166 miles of railway open as late as 1832; and the most exciting and picturesque episodes of railway development—the 'railway mania' of the forties, the saga of the great speculators like Hudson, and the colourful sub-culture of the 'navvies'—were still to come.

A similar limitation shows itself with regard to space. By deliberate choice the emphasis is on local history and so the

folders on coal-mining and railway development deal exclusively with the Northumberland-Durham coalfield. It is true that much technological development was pioneered here; but, to take railways as an example, there is a danger that students may remain unaware of the importance of Trevithick's work at Merthyr Tydfil, of the first use of cast-iron tramways at Coalbrookdale, and of Blenkinsop's experiments in the design of steam-engines at the Middleton colliery near Leeds (though Blenkinsop is referred to in the handbook and introduction).

With these reservations, however, the series may be accepted as a welcome addition to the supply of original source-material available to students. A great deal of scholarship has gone into the choice of extracts and the composition of the introductory articles. The extracts themselves are interesting and illuminating; and the fact that they are reproduced in a sturdy and durable form means that they will stand up well to the hard usage which they will undoubtedly receive.

A.E.E.

Parents are Welcome

by Patrick McGeeney
Longmans. 15s.

'Parents are Welcome' is a good title, a positive and encouraging start. It is a pity therefore that the first chapter is devoted, almost entirely, to examples of poor co-operation, hostility or lack of understanding.

No doubt this is intended by the author to be provocative and it is hoped that parents, and especially teachers will not be deterred by righteous indignation from reading further; for the book is well worth reading.

The educational importance of parental interest in their children's progress is stressed and supported by the evidence of research workers. As Patrick McGeeney writes, 'This still does not tell us anything about what it is that interested parents do that seems to be so crucial in its effect upon the child's performance.' The National Survey of Parental Attitudes—commissioned from the Plowden Committee is summarised pointing out that the home environment, the amount of time spent by parents with their children at week-ends, or in the evenings, their choice of books, etc., are all important factors but also that, 'The greater the readiness of parents to take advantage of opportunities to meet the teachers the better the performance of their children.'

The greater part of the book is devoted to examples of what has actually been done in schools which have made especial efforts to further good relations between parents and teachers, between the school and the community. The geographical spread is fairly wide and the social conditions varied. The accounts written by the author, or by the headteachers and teachers concerned, provide interesting and lively reading. They are convincingly authentic and difficulties as well as successes are described. Much of the criticism is constructive and could help readers to tackle their own problems with more understanding.

The examples given, perhaps inevitably, are of schools where special efforts have been made, of successes and failures. More might have been written about the less spectacular contacts made, the headteacher who spends much time helping parents incidentally, who provides a sympathetic ear for those in trouble, or of the small village school where parents and teachers are so well known to each other that barriers hardly exist.

The need for individual interviews and for discussion in small groups comes our way clearly. Parents are interested in their own children rather than in educational theories. When teachers attempt to explain educational principles and teaching methods the degree of understanding by the parents varies greatly. The parent who wants to know 'how long-division is taught' or 'what is done about spelling' is not satisfied by a lecture in unfamiliar tune. Teachers cannot expect to convey in short talks the knowledge and understanding acquired by training and experience. Patience and goodwill are needed on both

sides. 'Though it is possible that a genuine attempt to explain to parents may be misunderstood, thereby producing anxiety, it is likely that even greater anxiety will result where there is little, or no communication at all.'

Some of the more successful occasions appear to be those when parents are put in a learning situation in mathematics, art or music, with materials to use and handle experimentally as the children do themselves. Not only are the parents made more aware of the difficulties facing both their children and the teachers but they become more relaxed and talk more freely.

Although every school is different and each headteacher and class teacher needs to make contact with parents on the way that suits their school and neighbourhood best, reading this book should give help, encouragement and ideas to all who are convinced that co-operation is essential for the educational development of the children.

B.E.R.

Map of Educational Research

by R. H. Thouless
NFER. 60s.

Further Education in England and Wales

by L. M. Cantor and I. F. Roberts
Routledge and Kegan Paul. 50s.

When children look at an Ordnance Map some will give their attention not to the more significant features and symbols but to something such as the symbol for a windmill which strikes them as odd and memorable. Looking at this map of educational research one tends to remember bits of home-spun wisdom and some vivid images rather than its more formal and accredited features. Dr. Thouless writes for instance, in his chapter on teachers and teaching, 'A lion tamer is in a situation in which the lions growl at him and it is essential for his safety and his continued control over them that he should not growl back. This is the emotional non-involvement which the successful teacher of a difficult class may need: it does not seem to be covered in Cattell's lists of important personal qualities'.

The Map is a valuable acquisition and much is due to Dr. Thouless for his survey of research in large tracts of educational territory. The manner is as modest as it is clear and authoritative. The work which he describes is mainly British but there is sufficient mention of American research to show how much now we can extend our map knowledge by drawing on it.

The book begins with a brief but helpful account of research methods and proceeds by summarising the findings of research workers on various aspects of education and with great skill relating them to each other. The survey made by Dr. Thouless ends in 1965, but Dr. Wiseman continues it with a chapter on the work of the years 1965–8, including the Plowden Report, the activities of the Schools Council and of the international Project for the Evaluation of Educational Attainment. Dr. Wiseman pleads for more basic long-term research in British universities and for closer ties between academic psychology and the investigation of educational problems. There are many activities for which we use the one word 'learning', writes Dr. Thouless, and we still do not know enough about what the teacher does, or should do, to enable learning to take place. The only note of acerbity to be detected in this book occurs over what Thouless sees as gross over-simplification in certain recent theories of learning.

Research into the problems of further education is missing from the NFER survey. For a brief account of this, one can turn to Chapter 13 of *Further Education in England and Wales*. It is a story of what we do not know rather than of what we do. The need is great and any serious proposal to meet it, is still missing.

Further Education is difficult to define and its separation from higher education, as from adult education, by Cantor and Roberts (following the Robbins Report) has grave dangers. In their chapter on the Youth Service for instance, they make no attempt to examine its relationships with schools or with the adult community and

so miss the most important issues now being faced. The book contains much useful data on the administration and organisation of courses, but after five sound and informative chapters it becomes very uneven; science, architecture and building in further education are scarcely mentioned though agriculture for once gets a quite substantial coverage and music is not forgotten.

Here then are two useful guides. In compiling his survey, Dr. Thouless has performed not the least of his many valuable services to education.

D.M.H.

Let's Teach Them Right

Christopher Macy (Ed)
Pemberton 35s (Paper 20s)

The concern of the contributors to this symposium is to offer reasoned statements on the purpose, validity and scope of moral education and on the rôle of religious education in relation to it. Mr Macy has assembled eighteen articles by educationists, headteachers and moral philosophers expressing diverse and, in some cases, provocative points of view. Some of the articles have appeared previously in other publications, and the fact that they were not all written specifically for the present book weakens somewhat the continuity of the central argument; but all merit inclusion, and many gain from the proximity of others.

The task of teachers and educationists is stated by R. S. Peters as the working out of a new morality relevant to the world of to-day; he reminds us of the authority in moral affairs inevitably and inescapably exercised by parents and teacher. Reflections on the nature of moral education and its significance are presented in challenging form by Paul Hirst, Harold Loukes and Michael Hinton. Peter McPhail stresses the power of social feedback as a motivating influence on young people, and John Wilson urgently calls for more action research. The case for expunging religious education from the curriculum is forcefully argued by Lionel Elvin, Alan Humphries and Edward Blishen—in marked contrast are the possible harmonies of the two pointed by Edwin Cox, Ninian Smart and J. R. Hinnells. The climax of the book is perhaps reached in the joint article by James Hemming and Howard Marratt (previously available in pamphlet form) which aims at an alliance between religious and humanist educators and argues persuasively in favour of its practicability. The five subsequent articles deal each with an individual facet of the problem and, though of value, are less convincingly related to the major themes.

All heads of schools should read this book. Many subject specialists, too, (not only those in religious education departments) will find in it statements with implications for the content of the curriculum and for the teaching and learning situations which arise within the school; but the head especially who reads it will find himself compelled to contemplate the responsibilities of the school in the field of moral education, how they may be attained, and the consequences for himself and his staff in terms of relationships (inside the school and with parents), discipline, counselling and curricular patterns. He will find no ready answers, but will be faced with many lines of thought which he and his staff should explore. The book does much to clear away the confusion and prejudice which makes many teachers wish to opt out of the whole area—a decision which can only imperil their pupils—and gives grounds for believing that positive and effective approaches to this vital part of the education process may be within our grasp.

L.J.B.

Sociology of the School

M. D. Shipman
Longmans 15s.

Society and the Teacher's Role

F. Musgrove and P. H. Taylor
Routledge and Kegan Paul 21s.

Although a study of some aspects of the sociology of education is included as an integral part of every intending teacher's college course, the books available on the subject are surprisingly few. The contribution by the authors of these two books, therefore, are welcome additions to the literature.

Dr. Shipman's book sets out to give a description of primary and secondary schools as total organisations and to introduce some of the language, concepts and models of sociology while analysing the work of schools and it largely succeeds in these aims. Little is known as yet of the sociology of the school as an organisation but readers will be grateful to Dr. Shipman for illustrating some of the basic problems involved in such a study; those who know Willard Waller's American classic "The Sociology of Teaching" will be interested in the modification of the thesis of the schools as necessarily centres of conflict. For the non-sociologist, the book serves as a good introduction to the application of sociological theory to a study of schools. The reading list is a full one and the book is reasonably priced.

Professors Musgrove and Taylor's work, especially on parents' and teachers' conceptions of the teacher's role, is well known. The value of this book, which consists to some extent of articles previously published elsewhere, lies in the empirical research work undertaken by the authors relating to pupils, parents and teachers; what is perhaps less convincing is the rather dismal view which emerges of the teacher of the future in the chapter on "Teachers and Clients". The plea for a client-orientated educational service by the authors assumes that the teachers should become experts in educational means rather than arbiters of educational ends. The introductory chapter includes the sentence (page 11) "The 20th Century has been remarkable for the exclusion of parents from direct contact with teachers in schools" without taking into account any of the available evidence pointing in a contrary direction. However, the book is both lively and provocative, which no doubt the authors intended, even if their recommendations for future educational policy cannot be entirely sustained by their findings.

P.G.

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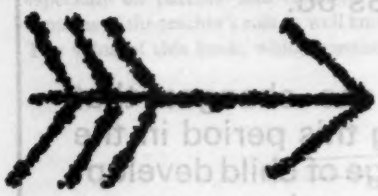

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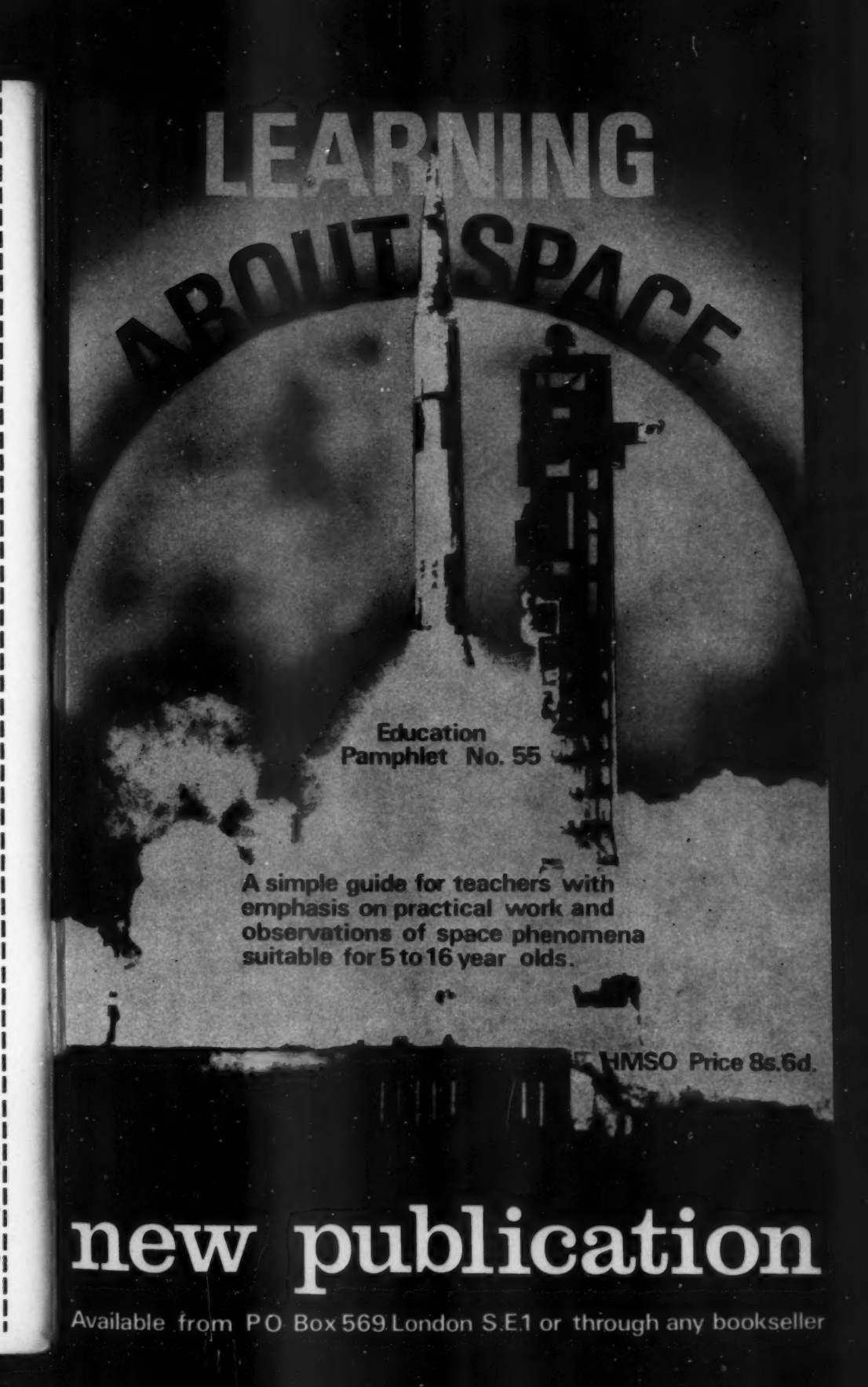
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